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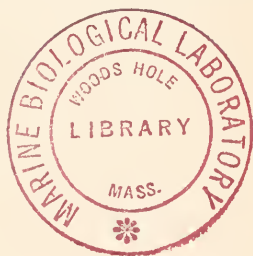


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THE
C R U S T A C E A

OF
DEVON AND CORNWALL

BY
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WILLIAM WESLEY AND SON
28 ESSEX STREET, STRAND, LONDON
1906



PRINTED BY TAYLOR AND FRANCIS,
RED LION COURT, FLEET STREET.

INTRODUCTION.

No other portion of the British Islands has been worked by so many students interested in Carcinology as our two South-western Counties. Montagu, and Leach, with his friends who collected for him; Jonathan and R. Q. Couch; that excellent naturalist F. W. P. Cocks; and, in more recent years, Spence Bate, Parfitt, Stebbing, Beaumont, Garstang, and Bassett-Smith, with many others, have from time to time added to our knowledge of the Crustacean Fauna. Nevertheless additions have been made during the last few years even among the Podophthalma; and after the publication of this volume, which very considerably extends our knowledge of the lower Orders, much will still remain to reward future workers, especially from dredging in 20 to 40 fathoms, where undoubtedly large numbers of Sympoda, Isopoda, Amphipoda, Ostracoda, and Copepoda may yet be found.

Little dredging has been carried out with a view to these smaller Crustacea beyond the Laminarian zone. Dr. Norman went to the Biological Station at Plymouth, in August 1903, for the express purpose of working in the deeper water, but unfortunately the month was extraordinarily tempestuous for the time of year; and in consequence of this and of the steamer's absence for part of the time on the work of the "International Fisheries Investigation Committee," on only one occasion was he able to get out as far as the Eddystone Lighthouse, and even on that day the weather was far from

favourable for dredging: notwithstanding, several species were added to the Fauna.

It was not until 1904 that Dr. Norman determined to include the Freshwater Crustacea, which had been almost entirely neglected in the two counties. The result of nearly two months' collecting in that year was not what might have been expected. The streams which, coming from Exmoor and Dartmoor, empty themselves on the north coast, run too rapidly down their rocky beds to harbour Entomostraca. There are no large lakes where *Holopedium*, *Bythotrephes*, *Leptodora*, &c. might be expected, and very few pieces of water of any size. Moreover, he was greatly surprised at not finding on the northern half of Dartmoor any such peaty water as is the favourite habitat of certain species, as *Acantholeberis curvirostris*, *Alonopsis elongata*, &c.

In 1905 another search for Freshwater Entomostraca was attempted in S.E. Devon, but was frustrated by illness. In that year Mr. Rupert Vallentin, to whom we are greatly indebted, came to our aid by making and sending to us gatherings from places in South Cornwall. Much, however, remains to be done in fresh-water.

The following is a list of the occasions on which Dr. Norman has visited Devon and Cornwall on Natural History expeditions:—

- 1852. Budleigh Salterton.
- 1853. Falmouth and Penzance.
- 1875. Torquay, Dartmouth, Salcombe.
- 1884. Starcross, Falmouth.
- 1889. Plymouth.
- 1903. May: Fowey, Padstow, Scilly Isles.
- 1903. Aug. 7 to Sept. 16: Plymouth, Salcombe.
- 1904. May 9 to June 30: North Devon coast, but chiefly inland through Northern Dartmoor, &c.; subsequently a little dredging at Exmouth and Dartmouth.

1905. Sept.: A few days in S.E. Devon for Freshwater Entomostraca.

This volume on the Crustacea of Devon and Cornwall is the joint work of the authors; but Dr. Scott has been primarily responsible for the account of the Freelifving Copepoda, and Dr. Norman for the remainder of the Crustacea.

The authors are greatly indebted to Mr. Andrew Scott, Dr. Scott's son, for the beautiful drawings of the Copepoda. The colotype plates of these are very satisfactory inasmuch as every minute detail of the artist's work is accurately reproduced. The first nine plates by Mr. E. Popple are, however, not quite so good, although the drawings were all that could be desired. These nine plates were photographed from pencil drawings, and not being wholly satisfactory Mr. A. Scott, taught by this experience, went over all his figures with indian-ink, and the result, as will be seen, has been excellent.

In the following Catalogue, when a name follows a locality, it must be understood that the authority is the owner of that name, and not the authors; but when the name is followed by an ! (e. g. "*R. Vallentin!*") it is implied that the authors are responsible for the identification. When after the name a reference is given (e. g. "*Garstang*, iii. p. 221"), such reference is in all cases to volume and page of "*The Journal of the Marine Biological Association of the United Kingdom.*"

The references given have been in most cases restricted to works easily accessible to an English naturalist with a small library; but in some cases they have been somewhat more extended for special reasons.

The following Tables will indicate certain points in the distribution of species; and these are followed by a list of publications in which descriptions or habitats of Crustacea from Devon and Cornwall may be found.

TOTALS OF CRUSTACEA.

The subjoined table gives the number of species in each Order of Crustacea as contained in the following fullest local catalogues of Crustacea, for comparison with those known in Devon and Cornwall:—

1. IRISH SEA.—“Fourth and Final Report on the Marine Zoology, Botany, and Geology of the Irish Sea.” Report Brit. Assoc. 1896, pp. 437–442. In this the higher Crustacea are reported on by Mr. A. O. Walker; the Ostracoda by Prof. G. S. Brady, Mr. A. Scott, and Dr. Chaster; the Copepoda by Mr. I. C. Thompson; and the Cirripedia by Mr. Marrat.
2. CLYDE DISTRICT.—“Fauna, Flora, and Geology of the Clyde Area,” Glasgow, 1901. Land, Freshwater, and Marine Crustacea by Thomas Scott, F.L.S., &c., pp. 328–358.
3. SHETLAND.—“Last Report of Dredging among the Shetland Isles.” Brit. Assoc. Report for 1868. Crustacea by Rev. A. M. Norman, pp. 247–301.

The marine column is filled in from this old report, which is the only one on the Fauna of the northern extremity of our islands. A few species have since been added to the Shetland Crustacean Fauna, but are not here included. The column of inland species is obtained from papers by Dr. T. Scott and R. Duthie, published in the following *Reports of the Fishery Board for Scotland*:—13th, pp. 174–191; 14th, pp. 229–243; 15th, pp. 327–333; and 16th, pp. 253–260.

	DEVON and CORNWALL.		IRISH SEA. 1896.		CLYDE DISTRICT. 1901.		SHETLAND. 1868. 1905.	
	Marine	Inland	Marine	Inland	Marine	Inland	Marine	Inland
Brachyura	41	...	27	...	29	...	18	
Anomura	16	...	12	...	16	...	17	
Macrura	32	...	22	...	27	...	20	
Schizopoda	29	...	16	...	25	...	11	
Stomatopoda	2							
Sympoda	13	...	17	...	31	...	12	
Isopoda	58	10	22	1	52	10	20	3
Amphipoda	142	2	129	1	167	1	111	2
Branchiopoda :								
1. Phyllocarida...	1	...	1	...	1	...	1	
2. Phyllopoda ...	...	1						
3. Cladocera	3	31	2	...	3	48	2	35
4. Branchiura ...	...	...	...	...	...	1		
Ostracoda	84	23	58	...	106	36	87	12
Copepoda	274	19	195	...	239	51	51	19
Cirripedia	27	...	10	...	12	...	6	
	722	86	511	2	708	147	356	71
	808		513		855		427	

I.

Southern Species which are not as yet known further north than the Firth of Clyde. Those marked with a prefixed * are as yet only recorded in Great Britain from the Devon and Cornish Coasts.

Polybius Henslowi.	*Rocinela Dumerilii.
*Portumnus biguttatus.	*Nerocila neapolitana.
*Bathynectes longipes.	Cirolana Cranchii.
Xantho Couchii.	Eurydice spinigera.
Gonoplax angulata.	* inermis.
*Nautilograpsus minutus.	Sphæroma serratum.
Mamaia squinado.	Hookeri.
Pisa tetraodon.	*Campecopea hirsuta.
biaculeata.	Zenobiana prismatica.
Achæus Cranchii.	Stenosoma acuminatum.
*Macropodia ægyptia.	* lanciferum.
Dromia vulgaris.	*Astacilla Deshayesii.
*Pagurus fasciatus.	*Arcturella damnoniensis.
* sculptimanus ¹ .	Jæra Nordmanni.
Diogenes pugilator.	Bopyrina Giardi.
Axius stirhynchus.	*Lone thoracica.
Arctus ursus.	Orchestia mediterranea.
Penæus caramote.	*Talorchestia brito.
*Nika Couchii.	? *Peltacoxa damnoniensis.
Alpheus macrocheles.	Amphilocheus neapolitanus.
Hippolyte Prideauxiana.	*Stenothoe setosa.
*Typton spongicola.	*Pereionotus testudo.
Haplostylus Normani.	*Apherusa ovalipes.
Anchialina agilis.	Isæa Montagu.
*Leptomysis mediterranea.	*Gammarus Edwardsi.
*Schistomysis Parkeri.	Mæra grossimana.
arenosa.	Ceradocus semiserratus.
* Helleri.	Gammarella brevicaudata.
Acanthomysis longicornis.	Stimpsonella chelifera.
*Squilla mantis.	*Leptocheirus guttatus.
Desmarestii.	*Biancolina cuniculus.
Cumopsis longipes.	Bruzeliella ocia.
Apsodes talpa.	Colomastix pusilla.
Latreillii.	Platophium Darwinii.
*Leptochelia dubia.	Caprella acutifrons.
Anthura gracilis.	* fretensis.

¹ This species has been recorded from the Firth of Forth, but its occurrence there seems to require confirmation.

II.

Other species which do not reach Norway.

<i>Corystes cassivelaunus.</i>	<i>Diastylis</i> Bradii.
<i>Portumnus latipes.</i>	<i>Nannastacus unguiculatus.</i>
<i>Portunus puber.</i>	<i>Tanais Dulongi.</i>
<i>corrugatus.</i>	<i>Tanaissus Lilljeborgii.</i>
<i>marmoreus.</i>	<i>Gnathia maxillaris.</i>
<i>Pilumnus hirtellus.</i>	<i>Conilera cylindracea.</i>
<i>Xantho floridus.</i>	<i>Eurydice truncata.</i>
<i>Inachus leptochirus.</i>	<i>Sphæroma rugicauda.</i>
<i>Macropodia longirostris.</i>	<i>Næsa bidentata.</i>
<i>Anapagurus Hyndmanni.</i>	<i>Cymodoce truncata.</i>
<i>Porcellana platycheles.</i>	<i>Idotea linearis.</i>
<i>Callianassa subterranea.</i>	<i>Pleurocrypta galatheæ.</i>
<i>Jaxea nocturna.</i>	<i>Orchestoidea Deshayesii.</i>
<i>Palinurus vulgaris.</i>	<i>Lysianax ceratinus.</i>
<i>Ægeon trispinosus.</i>	<i>Socarnes erythrophthalmus.</i>
<i>fasciatus.</i>	? <i>Urothoe marinus.</i>
<i>sculptus.</i>	<i>Phoxocephalus simplex.</i>
<i>Alpheus ruber.</i>	<i>Fultoni.</i>
<i>Palæmon serratus.</i>	<i>Pontocrates arenarius.</i>
<i>Palæmonetes varians.</i>	<i>Guernea coalita</i> (Greenland).
<i>Nyctiphanes Couchii.</i>	<i>Melita gladiosa.</i>
<i>Siriella Clausi.</i>	<i>Megaluropus agilis.</i>
<i>jaltensis.</i>	<i>Coremapus versiculatus.</i>
<i>armata.</i>	<i>Unciola crenatipalma.</i>
<i>Gastrosaccus sanctus.</i>	<i>Caprella tuberculata.</i>
<i>Cumopsis Goodsiri.</i>	

III.

Devon and Cornwall Crustacea which are found from
Norway to the Mediterranean.

<i>Ebalia tuberosa.</i>	<i>Carcinus mænas.</i>
<i>tumefacta.</i>	<i>Perimela denticulata.</i>
<i>Cranchii.</i>	<i>Xantho hydrophilus.</i>
<i>Ateleychus septendentatus.</i>	<i>Cancer pagurus.</i>
<i>Portunus puber.</i>	<i>Pinnotheres pisum.</i>
<i>depurator.</i>	<i>veterum.</i>
<i>holsatus.</i>	<i>Eurynome aspera.</i>
<i>arcuatus.</i>	<i>Inachus dorsettensis.</i>
<i>pusillus.</i>	<i>dorynchus.</i>

Macropodia rostrata.
Pagurus Prideauxii.
 bernhardus.
 cuanensis.
Anapagurus lævis.
Galathea strigosa.
 squamifera.
 nexa.
 intermedia.
 dispersa.
Munida bamffia.
Porcellana longicornis.
Upogebia stellata.
Homarus gammarus.
Nephrops norvegicus.
Crangon vulgaris.
Pontophilus spinosus.
Nika edulis.
Athanas nitescens.
Hippolyte varians.
Spirontocaris Cranchii.
Pandalina brevirostris.
Palæmon squilla.
Euphausia Mülleri.
Hemimysis lamornæ.
Bodotria scorpioides.
Eudorella truncatula.
Diastylis rugosa.
Pseudocuma longicornis.
Cumella pygmæa.
Paratanais Batei.
Tanaopsis laticaudata.
Cirolana borealis.
Limnoria terebrans.
Talitrus locusta.
Orchestia littorea.
Hyale Nilssoni.
Perrierella Audouiniana.
Callisoma Hopei.

Hippomedon denticulatus.
Orchomene humilis.
 ? *Tryphosa Sarsi.*
Ampelisca brevicornis.
Stenothoe marina.
Leucothoe spinicarpa.
Monoculodes carinatus.
Perioculodes longimanus.
Pontocrates altamarinus.
Synchelidium haplocheles.
Epimeria cornigera.
Eusirus longipes.
Apherusa bispinosa.
 Jurinii.
Paratylus Swammerdamii.
Dexamine spinosa.
Tritæta gibbosa.
Gammarus marinus.
 locusta.
Melita palmata.
 obtusata.
 ? *Elasmopus rapax.*
Lilljeborgia pallida.
Microdeutopus gryllotalpa.
Aora gracilis.
Lembos Websteri.
Gammaropsis maculata.
Photis longicaudata.
Bruzeliella falcata.
Jassa pelagica.
Erichthonius abditus.
 difformis.
Corophium volutator.
Chelura terebrans.
Phthisica marina.
Pseudoprotella phasma.
Caprella æquilibra.
 acanthifera.

IV.

Northern Species which have not yet been found South
of the English Channel.

<i>Ilyas araneus.</i>	<i>Gnathia oxyurea.</i>
<i>coarctatus.</i>	<i>Æga Strömii.</i>
<i>Calocaris Macandreae.</i>	<i>Idotea neglecta.</i>
<i>Crangon Allmani.</i>	<i>Munna limicola.</i>
<i>Ægeon nanus.</i>	<i>Fabricii.</i>
<i>Pandalus Montaguï.</i>	<i>Kröyeri.</i>
<i>Spirontocaris spinus.</i>	<i>Bopyrina Giardi.</i>
<i>pusiola.</i>	<i>Bopyroides hippolytes.</i>
? <i>Nyctiphanes Couchii.</i>	<i>Pseudione Hyndmanni.</i>
<i>Rhoda inermis.</i>	<i>Cryptothiria balani.</i>
<i>Gastrosaccus spinifer.</i>	<i>Hyperoche tauriformis.</i>
<i>Heteromysis formosa.</i>	<i>Tryphosella nanoides.</i>
<i>Leptomysis gracilis.</i>	<i>Höringii.</i>
<i>Macromysis neglecta.</i>	<i>Haplonyx cicada.</i>
<i>inermis.</i>	<i>Ampelisca macrocephala.</i>
<i>Schistomysis spiritus.</i>	<i>Metopa norvegica.</i>
<i>Parkeri.</i>	<i>Alderi.</i>
<i>Iphinoe trispinosa.</i>	<i>pusilla.</i>
<i>Diastylis Rathkei.</i>	<i>Paramphithoe bicuspis.</i>
<i>lævis.</i>	<i>Gammarus campylops.</i>
<i>Bradii.</i>	<i>Podoceropsis excavata.</i>
<i>lucifera.</i>	<i>Dulichia porrecta.</i>
<i>Tanaissus Lilljeborgii.</i>	<i>falcata.</i>
<i>Leptognathia brevicornis.</i>	<i>Caprella linearis.</i>

BIBLIOGRAPHY.

The following are the chief works and papers in which will be found accounts of the Crustacea of Devon and Cornwall.

PENNANT (THOMAS). British Zoology, vol. iv. 1777.

Forty-four species are recorded by the Author as British. Among these is one of great interest, his *Cancer arctus*, p. 17, of which he writes "Found by Dr. Borlase on Craig Killas in Mounts Bay." This is clearly *Arctus ursus*, Dana (this work, p. 13), which has generally been supposed to have been first added to the British Fauna by Jonathan Couch in 1862.

MONTAGU (GEORGE). In the papers of this excellent zoologist are descriptions of many Crustacea which he added to the British Fauna from the Devonshire Coast, where his chief hunting-ground was Salcombe. Trans. Linn. Soc. vol. vii. 1804, pp. 61-85, pls. vi., vii.; vol. ix. 1808, pp. 84-114, pls. ii.-viii.; vol. xi. 1813, pp. 1-26, pls. i.-v.; and same volume, 1815, pp. 179-204, pls. xii.-xiv.

LEACH (WILLIAM ELFORD) described many species from Devon and Cornwall in his articles on the Crustacea in: (1) The Edinburgh Encyclopædia, vol. vii. (1813?), Article "Crustaceology." (2) The Edinburgh Encyclopædia, Appendix, vol. vii. 1814, "Crustaceology," pp. 429-437. (3) Trans. Linn. Soc. vol. xi. 1815, pp. 306-400. (4) Encyclopædia Britannica Supplement, 1816, "Annulosa," pp. 401-453.

LEACH (WILLIAM ELFORD). "Malacostraca Podophthalmata Britannicæ," 1815. Among the forty-four very fine plates are many illustrations of species from Devon and Cornwall, collected by Cranch, Prideaux, Moore, Gibbs, Montagu, and Leach himself.

COUCH (JONATHAN). A Cornish Fauna. Pt. I. Vertebrata, Crustacea, and a portion of the Radiate Animals. Royal Institution of Cornwall, Truro, 1838.

Couch's catalogue of Crustacea contains 54 species (viz., *Brachyura* 34, *Anomura* 5, *Macrura* 13, *Schizopoda* 1, *Stomatopoda* 1). Among the species are:—

(a) *Cancer incisocrenatus*, n. sp., p. 69, which would seem to be a very young stage of *Cancer pagurus*.

(b) *Gelasimus Bellii*, n. sp., p. 72, regarded by Prof. Bell as the female or young male of *Gonoplax angulata*.

(c) Genus *Autonomea* (p. 79). "Eyes on short footstalks, projecting from beneath the border of the carapace. The snout scarcely passing beyond the eyes. The inner antennæ double, one filament much longer than the other. Outer antennæ slender, and much longer than the body. Front pair of legs only with hands.

"Long-horned Shrimp, *A. Olivii*, M.-Edwards, Crust. vol. ii. p. 361. This species has been hitherto unknown as British, but I have examined several specimens taken from the stomachs of fishes from the depths of 15 to 20 fathoms. Some of these were of larger size than described from the Mediterranean, one, not the largest, measuring 3 inches from snout to tail, with antennæ of the length of 5 inches." What species is this?

(d) *Porcellana acanthocheles*, n. sp., referred by Bell to *P. longicornis*.

COUCH (JONATHAN). The Cornish Fauna. Pt. I. The Vertebrate Animals and Crustaceans, with revisions and large additions by C. Spence Bate, F.R.S. Royal Institution of Cornwall, Truro, 1875.

This list of Crustacea contains 249 species (viz., *Brachyura* 39, *Anomura* 16, *Macrura* 24, *Schizopoda* 2, *Stomatopoda* 2, *Sympoda* 3, *Amphipoda* 82, *Isopoda* 43, *Ostracoda* 38). The following are the chief notes:—

Nika Couchii, p. 89. "I must insist that it is nothing more than a variety of *N. edulis*" (C. S. B.).

Alpheus Edwardsii, p. 90. "We" (C. S. B.) "have taken several specimens off the Dodman on stony ground in about 30 fathoms." This is *Alpheus macrocheles*, see this work, p. 16.

Typton spongiosum, Bate, p. 91. Brit. Assoc. Rep. 1867. This is *Typton spongicola*, O. G. Costa, see p. 20.

Caradina tenuirostre, Bate, p. 91. This is *Hippolyte varians*, see p. 17. Called by Bate in other papers *Caradina tenuis*, and *Caradina tenuirostris*.

— "Note on a new Species of Crustacea allied to *Gonoplax rhomboides*." Trans. Nat. Hist. & Antiq. Soc. Penzance, vol. i. 1851, pp. 83-85.

— "Discovery of *Alpheus Edwardsi* on the Coast of Cornwall." Proc. Linn. Soc., Zool. vol. v. 1861, pp. 210-212.

— "Note on the Occurrence of the Crustacean *Scyllarus arctus* in England." Proc. Linn. Soc., Zool. vol. v. 1862, p. 78.

— "On a new Species of *Axiis*." Trans. Nat. Hist. & Antiq. Soc. Penzance, vol. ii. 1864, pp. 165-166.

COCKS (W. P.). "Contributions to the Fauna of Falmouth." Ann. Rep. Cornwall Polytechnic Soc. 1849. List of *Cirripedia*, p. 75, and List of Crustacea, p. 78; *ibid.* 1851, p. 17, *Mysis vulgaris*, p. 21, *Apseudes tulpa*, *Praniza*, and *Auceus*; *ibid.* 1853, p. 36, *Alepas parasita* (further notice); *ibid.* 1854, *Alcippe lampas*, p. 22; *ibid.* 1856, *Entomostraca*, p. 15; *ibid.* 1857, *Anchorella uncinata*, &c., p. 82; *ibid.* 1860, *Limnoria terebrans* and *Chelura terebrans*, p. 95.

Cocks's notes include 183 species (i.e. *Brachyura* 39, *Anomura* 13, *Macrura* 22, *Schizopoda* 2, *Isopoda* 27, *Amphipoda* 18, *Entomostraca* 34, *Cirripedia* 28).

- BATE (C. SPENCE). "On the Development of the Cirripedia." Ann. & Mag. Nat. Hist. ser. 2, vol. viii. 1851, pp. 325-332, pls. vi.-viii.
- "On the British Diastylidæ." Ann. & Mag. Nat. Hist. ser. 2, vol. xvii. 1856, pp. 449-464, pls. xiii.-xv.
- "Carcinological Gleanings, No. II." Ann. & Mag. Nat. Hist. ser. 3, vol. xvii. 1866, pp. 24-31, pl. ii.
- "Carcinological Gleanings, No. IV." Ann. & Mag. Nat. Hist. ser. 4, vol. ii. 1868, pp. 1-10 (separate copy), pls. ix.-xi.
- On the Crustacea in "Report of Committee to Explore Marine Fauna and Flora of the South Coast of Devon and Cornwall." Brit. Assoc. Reports for the years 1865, 1867, 1869, and 1880.
- In Jour. Marine Biol. Assoc., vol. i. (series 1) 1888, pp. 170-178, is given a list of Crustacea of Plymouth Sound.

The list was apparently carelessly drawn up, includes numerous misprints, and is difficult to understand. It would seem, however, that only those names which have some observation after them are to be regarded as found near Plymouth—not indeed all of these from the Sound, as some are only recorded as from near the Eddystone. The Ostracoda, which had been identified by Prof. G. S. Brady, were from "40 fathoms near the Eddystone"; to that list of Ostracoda we have referred in the following work, but not to the catalogue in general, which we understand to embrace 179 species. Most of the localities may be found in Bate's previous publications.

BATE (C. SPENCE) & WESTWOOD (J. O.). History of British Sessile-Eyed Crustacea. 2 vols. 1861-1869.

This work contains all that is of importance from Bate's previously published papers dating from 1855 on Isopoda and Amphipoda.

GOSSE (P. H.). A Naturalist's Rambles on the Devonshire Coast. 1853. At p. 382, *Cerapus Whitei*, figured pl. xxii. figs. 12-14.

— "On *Bellidia Huntii*." Ann. & Mag. Nat. Hist. ser. 4, vol. xx. 1877, pp. 313-316 and plate.

BELL (THOMAS). History of British Stalk-Eyed Crustacea. 1853.

WHITE (ADAM). Popular History of British Crustacea. 1857.

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— "Notice of a Crustacean new to Cornwall." Trans. Nat. Hist. & Antiq. Soc. Penzance, vol. ii. 1864, pp. 13-14. (*Xantho Couchii*, Bell.)

— "On some of the Rarer Forms of Cornish Crustacea." Trans. Nat. Hist. & Antiq. Soc. Penzance, vol. ii. 1864, pp. 95-99. (*Caprellidæ*.)

— "Notice of the Capture of a new Species of *Palaemon*." Trans. Nat. Hist. & Antiq. Soc. Penzance, vol. ii. 1864, pp. 295-296.

'THE ZOOLOGIST.' Many short Notes on single species of Cornish Crustacea Podophthalma occur in this periodical: *e.g.*, by J. and

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- BRADY (Prof. G. S.). "A Monograph of the Recent British Ostracoda." Trans. Linn. Soc. vol. xxvi. 1868, pp. 353-495, pls. xxiii.-xli.
- "On the Distribution of British Ostracoda." Ann. & Mag. Nat. Hist. ser. 4, vol. ix. 1872. At p. 54 is a list of 35 Ostracoda dredged off Ilfracombe.
- Monograph of the Free and Semiparasitic Copepoda of the British Isles. 3 vols. 1875-1880, pls. i.-xciii.
- BRADY (G. S.) & ROBERTSON (D.). "Ostracoda taken among the Scilly Isles, and on the Anatomy of *Darwinella Stevensoni*." Ann. & Mag. Nat. Hist. ser. 4, vol. xiii. 1874, pp. 114-119, pls. iv., v.
- BRADY (G. S.) & NORMAN (A. M.). "Monograph of the Marine and Freshwater Ostracoda of the North Atlantic and North-Western Europe: Sect. I. Podocopa." Sci. Trans. Royal Dublin Soc. ser. 2, vol. iv. 1889, pp. 63-270, pls. viii.-xxiii. "Sections 2-4: Myodocopa, Cladocopa, Platyropa, and Appendix," vol. v. 1896, pp. 621-746, pls. i.-lxviii.
- PARFITT (EDWARD). "Catalogue of the Crustacea Podophthalma of Devonshire." Trans. Devonshire Assoc. Sci. Lit. & Art, 1870, pp. 21-24. This contains 68 species, but Mr. Parfitt's own observations only relate to common species.
- "The Fauna of Devon: Sessile-Eyed Crustacea." Trans. Devon. Assoc. Sci. Lit. & Art, 1873, pp. 1-25. Catalogue of 116 species. *Sphaeroma Hookeri*, *Orchestia mediterranea*, and *Niphargus aquilax* added to the local fauna.
- STEBBING (Rev. T. R. R.). Many papers on Isopoda and Amphipoda of Devonshire, including interesting additions to our Fauna, in Ann. & Mag. Nat. Hist., Ser. 4, vols. xiii., xiv., xv., xvii., xviii.; Ser. 5, vols. i., ii., xv.; Ser. 6, vol. viii. 1873-1891; and Linn. Soc. Jour., Zool. vol. xii. 1874, p. 146.
- "The Sessile-Eyed Crustacea of Devon." Trans. Devon. Assoc. Sci. Lit. & Art, 1874, and plate; and "Supplement," 1879. These two papers of Mr. Stebbing are supplemental to that of Mr. Parfitt, and add 35 to the 116 species of Isopoda and Amphipoda recorded from Devon.
- VALLENTIN (RUPERT). "Additions to the Fauna of Falmouth." Cornwall Polytech. Soc., 59th Report, 1892, p. 92.
- In this paper the occurrence of *Chirocephalus diaphanus* in Cornwall is recorded. It was found in a roadside pool near the entrance of Enys.
- "Observations on the Plankton of Looe Pool." Jour. Roy. Institut. Cornwall, vol. xv. 1903, p. 328. Sixteen species of freshwater Entomostraca were found.

JOURNAL OF THE MARINE BIOLOGICAL ASSOCIATION OF THE UNITED KINGDOM, Vol. I. 1887-8; and New Series, Vols. I.-VII., 1889-1905.

This Journal contains many records of Crustacea; the more important being *Portunus biguttatus* (see p. 2 of this work), and *Macropodia aegyptia* (see p. 7). In Vol. iv. pp. 155-163, is a good catalogue of the Parasitic Copepoda by Mr. Bassett-Smith, in which 46 species are recorded.

After almost the whole of our work was written, there was published in this Journal, vol. vii. no. 2, Dec. 1904, pp. 233-258, a Catalogue of the Crustacea of the neighbourhood of Plymouth, which embraces 228 species (*Brachyura* 35, *Anomura* 12, *Macrura* 24, *Schizopoda* 24, *Stomatopoda* 1, *Sympoda* 6, *Isopoda* 30, *Amphipoda* 52, *Phyllocarida* 1, *Cladocera* 3, *Ostracoda* 6, *Copepoda* 24, *Cirripedia* 10). From this Catalogue we have been able to add to the present work three species of *Corycæide* recorded on the authority of the late Professor P. T. Cleve, and a *Saccopsis* on the authority of M. É. Brumpt.

Carcinologists interested in the Fauna of Plymouth will find in this Catalogue of the Marine Biological Association the records of very many local habitats.

GOUGH (Dr. L. H.). "Report on the Plankton of the English Channel in 1903," in North Sea Fisheries Investigation Committee's Report (No. 2, Southern Area) for 1902-1903. 1905.

Lists of Crustacea taken in the tow-net, including some species new to the British Fauna.

CORRIGENDA.

P. 3, for "*Carcinus mænus*" read "*Carcinus mænas*."

Pp. 58, 59, for "*Orchemenella*" read "*Orchomenella*."

P. 64, for "*Amphilochus manuleus*" read "*Amphilochus manudens*."

ENUMERATION
OF THE
CRUSTACEA
HITHERTO FOUND IN AND OFF THE COUNTIES OF
DEVON AND CORNWALL.

Class CRUSTACEA.

Subclass I. *PODOPHTHALMA*.

Order I. **BRACHYURA**, Lamarek.

Subdiv. I. **Brachyura Genuina**, Boas.

Tribe I. **OXYSTOMA**, H. Milne-Edwards.

Fam. 1. **LEUCOSIIDÆ**.

EBALIA TUBEROSA (Pennant) = *E. Pennantii*, Leach.

It is also *E. insignis*, Lucas. Salcombe ; off Plymouth and Falmouth (*A. M. N.*) ; Exmouth (*Bell*).

EBALIA TUMEFACIA (Montagu) = *E. Bryerii*, Leach.

This is also *E. aspera*, Costa. Torquay (*Bell*) ; Exmouth (*Buchanan*) ; Polperro (*Couch*) ; off Plymouth and Falmouth (*A. M. N.*).

EBALIA CRANCHII, Leach.

E. discrepans, Costa, *E. Deshayesi*, Lucas, and *E. chiragra*, P. Fischer, are synonyms. Torbay and Exmouth (*Parjitt*) ; Plymouth and Falmouth (*A. M. N.* and others). The types of this species were taken by Cranch at Plymouth.

Fam. 2. CORYSTIDÆ.

CORYSTES CASSIVELAUNUS (Montagu).

Torquay (*Mrs. Griffiths*) ; Exmouth (*Parfitt*) ; Plymouth and Falmouth (*A. M. N.*).

ATELECYCLUS SEPTEMDENTATUS (Montagu) = *A. heterodon*, Leach.

Common in stomachs of Cod, Ray, and other fish, from off Polperro (*Couch*) ; Plymouth and Falmouth (*A. M. N.*).

Tribe II. CYCLOMETOPA, H. Milne-Edwards.

Fam. 1. POLYBIIDÆ.

POLYBIUS HENSLOWI, Leach.

This was first found by Professor Henslow in a herring-net off the north coast of Devon. It is taken not uncommonly in trawls and other nets off the south coasts of Devon and Cornwall, sometimes occurring in large numbers.

PORTUMNUS LATIPES (Pennant) = *P. variegatus*, Leach.

Three or four specimens found in South Devon (*Parfitt*) ; Exe Estuary (*R. A. Todd*) ; Whitsand Bay, Plymouth (*A. M. N.*) ; Falmouth, not uncommon (*Cocks*).

PORTUMNUS BIGUTTATUS (Risso).

1816. *Portunus biguttatus*, Risso, Hist. Nat. Crust. Nice, p. 51, pl. i. fig. 2.

1818. *Platyonichus nasutus*, Latreille, Encyclop. Méth. vol. x. p. 151.

1897. *Portumnus nasutus*, Garstang, Journ. Marine Biol. Assoc. vol. iv. (n.s.) p. 402.

1900. *Portumnus biguttatus*, A. Milne-Edwards & Bonnier, Expéd. Sci. du 'Travailleur' et du 'Talisman,' Crust. Décap. p. 61, pl. xiv. figs. 1-5.

Mr. W. Garstang found two specimens of this crab, both males, imbedded in a patch of coarse shell-sand on the south side of Drake's Island, Plymouth, at low water, spring tides : one on August 11, 1896, and another on the following day. This is a most interesting addition to the British fauna.

Fam. 2. PORTUNIDÆ.

PORTUNUS PUBER (Linné).

Along the whole coasts, common.

PORTUNUS CORRUGATUS (Pennant).

Salcombe (*A. M. N.*); Plymouth in the Sound (*R. A. Todd*); Polperro (*Laughrin, in Mus. Nor.*); Falmouth (*Cocks*).

PORTUNUS DEPURATOR (Linné).

Teignmouth and Dawlish (*Parfitt*); Exe Estuary (*R. A. Todd*); Salcombe, near Eddystone Lighthouse, and Falmouth (*A. M. N.*); Plymouth, occasional in 5-45 fathoms (*Bate*). Exterminated by *Octopus* (*Garstang, vi. p. 271*)*.

PORTUNUS MARMOREUS, Leach.

Leach states that it is not uncommon "on the sandy coasts of Devon from Torquay to the mouth of the Exe, and is frequently found entangled in the shore-nets of the fishermen, or thrown on the shore after heavy gales of wind." Plymouth, occasional, 3-45 fathoms (*Bate*); Polperro (*Laughrin, in Mus. Nor.*); Falmouth (*Cocks*).

PORTUNUS HOLSATUS, Fabricius.

Pole Sands, Exe Estuary (*R. A. Todd*); Plymouth (*Bate*).

PORTUNUS PUSILLUS, Leach.

"Very common on some parts of the coast of Devon" (*Leach*); Salcombe, Plymouth, and Falmouth (*A. M. N.*).

PORTUNUS ARCUATUS, Leach.

Salcombe, Plymouth, mouth of the Yealm and Falmouth. In great abundance in Falmouth Harbour on my first visit there in 1853, but it appeared to be very much scarcer in 1884.

BATHYNECTES LONGIPES (Risso).

1853. *Portunus longipes*, Bell, Brit. Crust. p. 361.

1891. *Bathynectes longipes*, Norman, Ann. & Mag. Nat. Hist. ser. 5, vol. vii. p. 276.

Cornwall (*Forbes & McAndrew, 1848*); Falmouth (*Cocks*); Penzance (*R. Q. Couch*); Polperro and Falmouth (*A. M. N.*); sandy ground in Mounts Bay and near the Eddystone (*W. Garstang*).

CARCINUS MÆNUS (Linné).

Abundant everywhere.

* *I. e.*, Journ. Marine Biol. Assoc. vol. vi. p. 271. All similar references in the present work refer to the same Journal.

Fam. 3. PERIMELIDÆ.

PERIMELA DENTICULATA (Montagu).

Bantham and Torquay (*Leach*); Exmouth, tide-marks, Falmouth (*A. M. N.*); Plymouth, 4-30 fathoms (*Bate*); St. Ives, 1905 (*Vallentin*!).

Fam. 4. XANTHIDÆ.

PILUMNUS HIRTELLUS (Linné).

All along the coasts.

XANTHO FLORIDUS (Montagu).

Plymouth, Polperro, Falmouth (*A. M. N.*); rocky coast, occasionally, 6-20 fathoms (*Bate*).

XANTHO HYDROPHILUS (Herbst) = *X. rivulosus*, Risso.

The specific name *rivulosus* is wrongly assigned in Bell to Milne-Edwards instead of to Risso.

Plymouth, Polperro, Falmouth, Scilly Isles, &c. (*A. M. N.*).

XANTHO COUCHII, Bell.

1851. *Xantho Couchii*, Bell, in Couch "Notices of a Crustacean new to Cornwall," Penzance Nat. Hist. & Antiq. Soc. vol. ii. p. 13.

1853. *Xantho tuberculata*, R. Q. Couch, in Bell's Brit. Crust. p. 359.

Bell must have forgotten that two years previously to the publication of the last part of his work he had named a species *Xantho Couchii* which he, in his work, calls *X. tuberculata*. The type was found by Couch in "crevices of *Eschara foliacea*, in deep water off the Runnell Stone in Mounts Bay." Polperro (*Laughrin*, in *Mus. Nor.*); Plymouth, frequent in 4-45 fathoms (*Bate*, and *Garstang*, ii. p. 339).

Fam. 5. CANCERIDÆ.

CANCER PAGURUS, Linné.

Often attains an unusual size on the Cornish coast.

Tribe III. CATAMETOPA, H. Milne-Edwards.

Fam. 1. GONOPLACIDÆ.

GONOPLAX ANGULATUS (Pennant).

Exmouth (*Parfitt*); Salcombe (*Montagu*): west of Star-cross, Plymouth, and Polperro (*A. M. N.*); Falmouth (*Cocks*).

Fam. 2. GRAPSIDÆ.

NAUTILOGRAPSPUS MINUTUS (Linné) = *Planes Linnæa* (Leach), Bell.

Occasionally brought to the coast of Cornwall by long-continued S.W. winds. Polperro (*J. Couch*). Mr. Thomas Cornish ('Zoologist,' 1882, p. 118) records six ♂ and one ♀ specimens taken out of soil and seaweed growing on a derelict cask of paraffin picked up at sea, about six miles off Penzance; and again, curiously enough ('Zoologist,' 1884, p. 116), he writes:—"I have received from a derelict water-logged barrel of paraffin, which drifted ashore near Newlyn West, four specimens of the Floating Crab, which were all alive when received." Cocks records a specimen from Bar Castle Point, Falmouth, after a storm Oct. 1845, and a mutilated specimen from stomach of a fish in 1848. On Sept. 26, 1895, a specimen was procured by Mr. T. B. Hodgson on the bottom of a ship which had crossed the Atlantic to Plymouth; and on the following Oct. 21, another was found amidst a mass of *Lepas anatifera* which was covering cork brought in from about three miles off the Plymouth Breakwater (*Journ. Mar. Biol. Soc.* vol. iv. p. 178).

Fam. 3. PINNOTHERIDÆ.

PINNOTHERES PISUM (Pennant).

In *Mytilus* and *Cardium echinatum* not uncommon, Falmouth (*Cocks*); in Ascidians, Salcombe (*A. M. N.*); Teignmouth Bay, in *Mytilus* common (*Todd*, vi. p. 555); in Mussel, at Saltash (*Bate*); Plymouth (*Biol. Lab.*).

PINNOTHERES VETERUM (Pennant).

In *Pinna*, at Salcombe (*Montagu*); off Sidmouth (*A. M. N.*); in *Pinna*, 30 fathoms (*Bate*); in *Pinna* and *Mytilus*, at Falmouth (*Cocks*).

Tribe IV. OXYRHYNCHA, H. Milne-Edwards.

Fam. 1. PISIDÆ.

EURYNOME ASPERA (Pennant).

It is *E. scutellata*, Risso, *E. spinosa*, Hailstone, and *E. boletifera*, Costa.

In deeper water on hard ground, all along the coasts, but sometimes found inshore.

MAMAIA SQUINADO (Herbst).

Very common.

The generic name *Maia* was already in use among Aves when Lamarck first employed it for a crustacean in 1801. Moreover, the genus, as defined by him, would not embrace "*Maia squinado*." We are of opinion that *Mamaia*, Stebbing, should be used, and that *Paramaya* of Herbst has no claim (see Stebbing, 'Marine Investigations in South Africa, South African Crustacea,' pt. 3, 1905, p. 22, and Proc. Biol. Soc. Washington, vol. xviii. June 1905, p. 157; and also Mary Rathbun, Proc. Biol. Soc. Washington, vol. xviii. Feb. 1905, p. 73).

PISA TETRAODON (Pennant).

Teignmouth (*Leach* & *A. M. N.*); Plymouth, not common, 10-20 fathoms (*Bate*); Falmouth, rare (*A. M. N.*).

PISA BIACULEATA (Montagu) = *Pisa Gibbsii*, Leach.

Not uncommon on the southern coasts of Devon and Cornwall (*Leach*); not uncommon on Cornish coast, in 2-20 fathoms (*Couch*); Falmouth and Polperro (*A. M. N.*).

HYAS COARCTATUS, Leach.

South Devon (*Leach*); off the Oar Stone, in 12-20 fathoms (*Parfitt*); off Plymouth and Falmouth, to 40 fathoms (*A. M. N.*).

HYAS ARANEUS (Linné).

On the shores of Devonshire it is of rare occurrence (*Leach*); Plymouth, frequent in 6-40 fathoms (*Bate*); Falmouth (*A. M. N.*).

Fam. 2. MACROPODIIDÆ.

INACHUS DORSETTENSIS (Pennant).

Common all along the coasts.

INACHUS DORYNCHUS, Leach.

Much scarcer than the last. Salcombe (*Leach* & *A. M. N.*); Plymouth and Falmouth (*A. M. N.*); common in crab-pots in Cornwall (*Couch*).

INACHUS LEPTOCHIRUS, Leach.

First discovered by Cranch on the western coast of Devon and Cornwall (*Leach*); Falmouth, not uncommon in trawl-refuse (*Cocks* & *A. M. N.*).

ACHÆUS CRANCHII, Leach.

First found by Cranch at Falmouth. Salcombe and Plymouth (*A. M. N.*).

MACROPODIA ROSTRATA (Linné) = *Stenorynchus phalangium*, Bell.

Common.

MACROPODIA LONGIROSTRIS (Fabricius) = *Stenorynchus tenuirostris*, Bell.

Generally distributed along the coast.

MACROPODIA ÆGYPTIA (H. Milne-Edwards).

1825. *Stenorynchus phalangium*, Audouin, Explic. des Planches de Savigny, pl. vi. fig. 6.

1834. *Stenorynchus ægyptius*, H. Milne-Edwards, Hist. Nat. Crust. vol. i. p. 280.

1894. *Stenorhynchus ægyptius*, Garstang, Journ. Marine Biol. Assoc. vol. iii. p. 222.

Mr. W. Garstang, ten years ago (*l. c.*), stated that this species, previously unrecognized in our fauna, had been found by him at Plymouth, and that it was "not uncommon on weedy ground, and was at once to be distinguished from the other Spider Crabs by its stripes of reddish-brown pigment." A. Milne-Edwards and Bouvier* give the following distinguishing characters of *M. ægyptia* and *M. longirostris*:—

"*ægyptia*. Rostre n'atteignant pas tout-à-fait l'extrémité des pédoncules antennaires, un peu arqué vers la base.

* 'Résultats des Campagnes Scientifiques, par Prince de Monaco,' Fasc. xiii. 1899, p. 48.

Ordinairement un tubercule épistomien en arrière de la région antennaire.

"*longirostris*. Rostre droit ou relevé vers la haut, dépassant toujours l'extrémité des pédoneules antennaires. Le rostre n'atteint pas l'extrémité du fouet antennaire, &c."

Writing of the six species of *Stenorhynchus* (*Macropodia*) which they are noticing, they say: "Les espèces de chaque groupe sont très voisines et il pourrait se faire qu'on fût dans la suite, amené à les réunir en une seule; le *S. ægyptius*, notamment, est extrêmement voisin du *S. longirostris*."

Subdiv. II. Dromiaceæ or Brachyura Primitiva, Boas.

Fam. DROMIIDÆ.

DROMIA VULGARIS, H. Milne-Edwards.

Mr. G. F. Tregelles records the occurrence of two specimens from the Cornish coast, but the exact locality is not indicated ('Zoologist,' 1882, p. 272).

Order II. ANOMURA, H. Milne-Edwards.

Fam. 1. PAGURIDÆ.

ANAPAGURUS LÆVIS (W. Thompson).

Salcombe, Plymouth, Starcross, Falmouth, Scilly Isles (A. M. N.).

ANAPAGURUS HYNDMANNI (W. Thompson).

Sidmouth, Starcross, Salcombe, Plymouth, Falmouth (A. M. N.).

PAGURUS BERNHARDUS (Linné).

Synonyms are *P. ulidianus*, W. Thompson, and *P. eblanienensis*, Kinahan (Nat. Hist. Review, vol. iv. 1857, p. 84), the young.

PAGURUS PRIDEAUXII, Leach.

Common.

PAGURUS CUANENSIS, W. Thompson.

1845. *Pagurus spinimanus*, Lucas, Expl. scient. de l'Algérie, i. Crust. p. 29, pl. iii. fig. 3.

1863. *Eupagurus Lucasi*, Heller, Crust. südl. Europa, p. 163, pl. v. fig. 10.

1896. *Eupagurus cuanensis*, Bouvier, Feuille des Jeunes Naturalistes, 26^e Année, p. 150, fig. 19.

1900. *Eupagurus cuanensis*, A. Milne-Edwards & Bouvier, Expéd. Sci. 'Travailleur' et 'Talisman,' Crust. Décap. p. 227, pl. xxviii. figs. 10-20.

Sidmouth, Starcross, Salcombe, Plymouth, Scilly Isles (A. M. N.); Falmouth (*Cocks*).

PAGURUS SCULPTIMANUS, Lucas.

1845. *Pagurus sculptimanus*, Lucas, Expl. scient. de l'Algérie, i. Crust. p. 32, pl. iii. fig. 6.

1853. *Pagurus Forbesii*, Bell, Brit. Stalk-Eyed Crust. p. 186.

1863. *Eupagurus sculptimanus*, Heller, Crust. südl. Europa, p. 162, pl. v. fig. 9.

1892. *Eupagurus sculptimanus*, Chevreux et Bouvier, "Voyage de 'Melita' aux Canaries et au Sénégal," Mém. Soc. Zool. de France, vol. v. p. 22, pl. ii. figs. 18-20.

1896. *Eupagurus sculptimanus*, Bouvier, "Pagurines des Mers d'Europe," Feuille des Jeunes Naturalistes, 26^e Année, p. 128, fig. 13.

The type specimen of *P. Forbesii* was found by Cocks off Falmouth. Bate procured it in 1881 from off the Dodman and sent A. M. N. a specimen; and the latter dredged it in 1889, and again in 1893, near the Eddystone Lighthouse.

"PAGURUS FASCIATUS, Bell," Brit. Stalk-Eyed Crustacea, p. 375.

Nothing is known of this Paguroid beyond the drawing of Mr. Cocks, since even the description given by Bell was taken from that drawing. It is doubtless this species of which Mr. Cocks himself wrote: "*Pagurus Bellii*, Cocks. I procured this beautiful and rare crab from trawl-refuse, Nov. 1845."

DIOGENES PUGILATOR (Roux).

1828. *Pagurus pugilator*, Roux, Crust. de la Médit. pl. xiv. figs. 3, 4.

1845. *Pagurus arenarius*, Lucas, Expl. scient. de l'Algérie, i. Crust. p. 33, pl. iii. fig. 7.

1850. *Pagurus Dillwynii*, Bate, "Notes on the Fauna of Swansea," Rep. Swansea Lit. & Sci. Soc. pl. iv. fig. 2; and Ann. & Mag. Nat. Hist. ser. 2, vol. vii. 1851, p. 320, pl. x. fig. 11.

1853. *Pagurus Dillwynii*, Bell, Brit. Stalk-Eyed Crust. p. 377.

1861. *Pagurus ponticus*, Kessler, Voy. Zool. sur la litt. septent. de la Mer Noire, p. 249 (*fide* Milne-Edwards & Bouvier).

1863. *Diogenes varians*, Heller, Crust. südl. Europa, p. 170, pl. v. figs. 13, 14.

1872. *Pagurus Lafontii*, P. Fischer, Crust. déc. de la Gironde (Arch. Soc. Linn. Bordeaux, vol. xxviii.), p. 13 (separate copy).

1874. *Pagurus currimanus*, Clément, "Nouveau Pagure," Bull. Soc. d'Étude Scient. Nat. de Nîmes (separate copy with plate).

- 1875?. *Pagurus algarbiensis*, de Brito Capello, Journ. Sci. math., phys. e natur. Lisboa, xviii. (*sic fide* Capello).
 1876. *Pagurus varians* (= *algarbiensis*, fide Capello), de Brito Capello, "Catalogo dos Crostaceos de Portugal," Journ. Sci. math., phys. e natur. Lisboa, vol. v. p. 274, figs. 7, 9.
 1876. ? *Pagurus Bocagei*, id. ibid. p. 273, figs. 6, 8.
 1896. *Diogenes pugilator*, Bouvier, Feuille des Jeunes Naturalistes, 26^e Année, p. 153, figs. 9, 46.

We have given this full list of references, which might be much extended, because the species has been so often described. The foregoing synonyms have the authority of A. Milne-Edwards and Bouvier (Expéd. Sci. du 'Travailleur' et 'Talisman,' Crust. Décap. 1900, p. 182). We can confirm them with one exception. There is a doubt in our mind as regards *P. Bocagei*, the cheliped of which is represented as of somewhat different form and strongly tuberculated. Bouvier (Bull. Soc. Philomat. Paris, ser. 8, vol. iv. p. 55) has recorded the occurrence of the species from such distant localities as Aden, Perim, and a var. *intermedius* from Senegal.

Cornwall (*Couch*); Teignmouth and Bigberry Bay (*Bate*); on the bar at Salcombe (*R. A. Todd*); Exmouth, west of Starcross, and mouth of the Yealm (*A. M. N.*).

Fam. 2. GALATHEIDÆ.

GALATHEA STRIGOSA (Linné).

Common.

GALATHEA SQUAMIFERA (Montagu).

1868. *Galathea digitidistans*, Bate, "Carcinological Gleanings," Ann. & Mag. Nat. Hist. ser. 4, vol. ii. p. 113, ♂.

Common.

GALATHEA NEXA, Embleton.

Plymouth, occasionally, in 40 fathoms (*Bate*). Cocks says of *G. nexa*, at Falmouth, "Gwyllyn-vase, trawl-refuse, not uncommon." This old determination cannot now be regarded as certain; but he refers to a "*nexa* var." which was no doubt one of the following species.

GALATHEA DISPERSA, Bate.

1858. *Galathea dispersa*, Bate, Journ. Proc. Linn. Soc. vol. iii. p. 3.
 1861. *Galathea dispersa*, Kinahan, "Britannic Species of *Crangon* and *Galathea*," Trans. Roy. Irish Acad. vol. xxiv. p. 99, pl. xiii.
 1863. *Galathea nexa*, Heller (*partim*), Crust. südl. Europa, p. 191, pl. vi. fig. 4 (*non* fig. 3).

1888. *Galathea dispersa*, Bonnier, "Les Galatheidæ des Côtes de France," Bull. Sci. de la France et Belgique, vol. xix. p. 68, pl. xiii. figs. 1-3.

Plymouth, common (*Bate & A. M. N.*); Salcombe and Falmouth (*A. M. N.*)

GALATHEA INTERMEDIA, Lilljeborg.

1815. *Galathea squamifera*, Leach (*partim*), Malac. Podoph. Brit. pl. xxviii A. fig. 2.
 1851. *Galathea intermedia*, Lilljeborg, "Norges Crustaceer," Öfvers. K. Vet.-Akad. Förhandl. 1851, p. 21.
 1858. *Galathea Andrewsii*, Kinahan, Nat. Hist. Review, vol. iv. p. 228, pl. xvi. figs. 8 a-d.
 1861. *Galathea Andrewsii*, Kinahan, "Britannic Species of Crangon and Galathea," Trans. Roy. Irish Acad. vol. xxiv. p. 95, pl. xii.
 1869. *Galathea intermedia*, Norman, "Last Report Dredging Shetland," Brit. Assoc. Rep. for 1868, p. 264.
 1880. *Galathea intermedia*, Boas, "Studier over Decapodernes Slægtskabsforhold," Vidensk. Selsk. Skr. 6 Række, p. 124, pl. i. figs. 14, 35; pl. ii. fig. 64; pl. iii. figs. 94, 123.
 1882. *Galathea Giardii*, Th. Barrois, Cat. Crust. Podoph. et Échinodermes rec. à Concarneau, p. 22, fig. 2.
 1887. *Galathea Parroceli*, Gourret, "Crust. Décap. Nouv. du Golfe de Marseille," Compt. Rend. Acad. t. cv. p. 1034.
 1888. *Galathea Parroceli*, Gourret, "Revis. Crust. Podoph. Marseille," Ann. du Mus. d'Hist. Nat. Marseille, Zoologie, vol. iii. p. 110, pl. vi. figs. 11-24.
 1888. *Galathea intermedia*, J. Bonnier, "Les Galatheidæ des Côtes de France," Bull. Sci. de la France et Belgique, vol. xix. p. 44, pl. x. figs. 1, 2; pl. xi. figs. 1-14.

An important difference between this species and its allies is that in *G. intermedia* the *first* feet only are furnished with a palp, while all other British species have the first *three* pair of feet thus provided. Bonnier's excellent paper should be consulted by those who find difficulty in distinguishing the species of this genus.

Plymouth, frequent in 10-45 fathoms (*Bate*); Salcombe, Plymouth, Eddystone Lighthouse, and Falmouth (*A. M. N.*).

MUNIDA BAMFFIA (Pennant) = *M. Rondeletii*, Bell.

Not rare from deeper water, chiefly from trawl-refuse.

Fam. 3. PORCELLANIDÆ.

PORCELLANA PLATYCHELES (Pennant).

Common, tide-marks under stones.

PORCELLANA LONGICORNIS (Pennant).

1857. *Porcellana priocheles*, Kinahan, Nat. Hist. Review, vol. iv. p. 84.

Common from tide-marks to 40 fathoms.

Order III. **MACRURA**, Latreille.Fam. 1. **CALLIANASSIDÆ**.**CALLIANASSA SUBTERRANEA** (Montagu).

Montagu's types were from the Kingsbridge Estuary. Bate records one specimen from 4 fathoms at Plymouth, and Cocks procured it from stomachs of fish at Falmouth.

UPOGEBIA STELLATA (Montagu) = *Gebia deltäura*, Leach.

It is also *Gebios littoralis* of Risso. Salcombe, by digging between tide-marks (*Montagu* & *A. M. N.*); young specimens dredged near the mouth of the Yealm, and from fish-stomachs at Plymouth (*A. M. N.*); at Falmouth in stomachs of various fish, and boring at low-water mark at Helford (*Cocks*).

Fam. 2. **CALOCARIDÆ**.**CALOCARIS MACANDREÆ**, Bell.

1884. *Calocaris Macandreae*, G. O. Sars, "Bid. til Kundsk. Decapodernes Forvandlinger," Archiv f. Mathem. og Naturv. p. 166, pls. ii., vi., vii. (development).

The adult of *Calocaris* has not yet been found off the Devon and Cornish coasts, but Mr. Robert Gurney has recorded the young stage from Plymouth.

Fam. 3. **AXIIDÆ**.**JAXEA NOCTURNA** (Chiareghin).

1847. *Jaxea nocturna*, "Nardo Sinonyma moderna . . . Crustacei . . ." Chiareghin.

1862. *Calliaxis adriatica*, Heller, "Untersuchungen Litoralfauna adriatischen Meeres," Sitz. K. Akad. Wiss. Wien, vol. xlv. p. 440, pl. iii. figs. 22-30.

1863. *Calliaxis adriatica*, Heller, Crust. südlichen Europa, p. 208, pl. vi. figs. 16-18.

1869. *Jaxea nocturna*, Nardo, Annotazioni quinquantaquattro Crustacei del Mare Adriatico, p. 102, pl. ii. fig. 5.

1884. *Zoea*, Claus (C.), "Zur Kenntniss der Kreislaufsorgane der Schizopoden und Decapoden," Arb. Zool. Institut. Univ. Wien, vol. v. p. 302, pl. viii. figs. 48-50; and "Neue Beiträge zur Morphologie der Crustaceen," ibid. vol. vi. 1885, p. 63, pl. v. figs. 44, 45.

1889. "Lucifer-like Decapod-Larva" = *Trachelifer*, Brook (G.), Proc. Roy. Soc. Edinb. vol. xv. p. 420.

1891. *Calliaxis, zoea, Cano* (G.), "Sviluppo postembryonale della *Gebia, Arius, Callianassa* e *Calliaxis*," Boll. Soc. di Natur. in Napoli, vol. v. p. 12, pl. iv. figs. 1-13.

1899. *Calliaxis adriatica*, larva *Trachelifer*, Scott (Th.), Seventeenth Ann. Rep. Fish. Board Scotland, pp. 268, 269, pl. xii. figs. 16-20.
 1900. *Jaxea nocturna*, Scott (Th.), Eighteenth Report Fish. Board Scotland, p. 405; and 1902, Twentieth Report Fish. Board Scotland, p. 481.

Mr. G. Brook was the first person to meet with evidence of this species on the coast of Britain. He described in 1889 what is now known to be the larva of *Jaxea* under the name *Trachelifer*. In 1899, Dr. T. Scott recorded the larval stage from Loch Fyne and the Firth of Clyde. Subsequently he recorded the same stage from Tobermory in the Isle of Man; while his son, Mr. A. Scott, procured it from the Barrow Channel, near Barrow-in-Furness. In 1900, Dr. Scott recorded the occurrence of adult specimens in the stomachs of Gurnards from the Firth of Clyde.

Mr. Robert Gurney informed us that he had procured the larva from off Salcombe, Devon, and was subsequently so kind as to give one of us (*A. M. N.*) a specimen.

AXIUS STIRHYNCHUS, Leach.

Sidmouth, among prawns (*Leach*); near Plymouth (*Montagu*); Polperro (*Couch*); at Falmouth in stomachs of various fish, and at low-water at Helford and Pendennis in sand (*Cocks*).

Fam. 4. SCYLLARIDÆ.

ARCTUS URSUS, Dana = *Scyllarus arctus*, Fabricius.

About 40 years ago specimens were received by me from time to time which had been procured by Laughlin from off Polperro (*A. M. N.*). Occasionally brought from deep water to the Biological Laboratory at Plymouth, but Bate says "2-6 fathoms." Penzance (*Bate*); off the Land's End and off north coast of Cornwall (*Thos. Cornish*).

Fam. 5. PALINURIDÆ.

PALINURUS VULGARIS, Latreille.

Abundant on Devon and Cornish coasts.

Fam. 6. HOMARIDÆ.

HOMARUS GAMMARUS (Linné).

Common. Very large specimens of the Common Lobster have been recorded from the Cornish coast. In the 'Zoologist' of 1873, p. 3618, Mr. J. Barrington Deacon describes one

from Plymouth Sound which reached 3 feet 2 inches from the tip of the claw to the end of the tail, and weighed 15 lbs. $2\frac{1}{4}$ ounces.

NEPHROPS NORVEGICUS (Linné).

1881. *Nephrops cornubiensis*, Bate, Brit. Assoc. Rep. for 1880, p. 160, and woodcut (the young).

Frequently brought in by the trawlers, especially from about 40 miles west of Longstrips.

Fam. 7. ASTACIDÆ.

ASTACUS PALLIPES, Lereboullet.

1853. *Astacus fluviatilis*, Bell, Brit. Stalk-Eyed Crust. p. 237.

1858. *Astacus pallipes*, Lereboullet, "Desc. deux nouv. espèces d'Ecrevisse de nos Rivières," Mém. Soc. Sci. nat. Strasbourg, vol. v. p. 7, pl. ii., pl. iii. fig. 3.

1884. *Astacus pallipes*, Faxon, "Desc. new species of *Cambarus*," Proc. Amer. Acad. Arts and Sciences, vol. xx. p. 154.

"We have a good Devon specimen in our Museum, Plymouth, from Mr. Prideaux," Dr. Moore, in Loudon's Mag. Nat. Hist. n. s. vol. iii. p. 289 (*vide* Parfitt). The presence of the species in the County requires confirmation.

Fam. 8. PENÆIDÆ.

PENÆUS CARAMOTE (Risso).

1816. *Alpheus caramote*, Risso, Hist. Nat. Crust. Nice, p. 90.

18(20?). *Penæus trisulcatus*, Leach, Malac. Podoph. Brit. pl. xlii.

1853. *Penæus caramote*, Bell, Brit. Stalk-Eyed Crust. p. 318.

Falmouth, "from the stomach of *Morrhua vulgaris* and *M. aglefinus*, rare" (Cocks).

Fam. 9. CRANGONIDÆ.

CRANGON VULGARIS (Linné).

Common.

CRANGON ALLMANI, Kinahan.

1857. *Crangon Allmani*, Kinahan, Nat. Hist. Review, vol. iv. p. 80, and woodcut.

1861. *Crangon Allmani*, Kinahan, "Brit. Species of *Crangon* and *Galathea*," Trans. Roy. Irish Acad. vol. xxiv. p. 64, pl. iii.

Plymouth (W. Garstang, ii. 1892, p. 339).

PONTOPHILUS SPINOSUS, Leach.

1868. *Pontophilus spinosus*, M. Sars, Bidrag til Kundskab om Christianiafjordens Fauna, p. 24, pl. ii. figs. 38-45; pl. iii. figs. 46, 47.

1888. *Crangon spinosus*, Gourret, "Revis. Crust. Podoph. Marseille," Ann. Mus. d'Hist. Nat. Marseille, Zoologie, vol. iii. p. 147, pl. xi. figs. 9-21, pl. xii. figs. 1, 2.

The figures of this species given by Sars as well as those of Gourret, and the figures by the former of *Pontophilus norvegicus* and *Crangon echinulatus* (= *C. serratus*, Norman*) are admirable. The figure given by Kinahan, which is supposed to represent this species, has been drawn as respects the spination entirely from imagination; and similarly we have never been able to understand what the species is which he described under the name *Cheraphilus Pattersonii*. The carapace of the present species has five rows of spines (not seven as drawn by him), and the number is three (with perhaps two minute ones in front) in the central row; three in each upper lateral row, and two on each lower row, these last being situated on the front half of the carapace.

"In the stomachs of *Trigla hirundo*, *T. lyra*, and *G. luscus*, and in trawl-refuse, not uncommon off Falmouth" (*Cocks*); Plymouth, frequent in 6-15 fathoms (*Bate*); Polperro (*Couch*); off Devon coast in Start Bay (*R. A. Todd*, vi. p. 552).

ÆGEON TRISPINOSUS (Hailstone).

For *Ægeon* as here employed, see Robert Gurney, Proc. Zool. Soc. 1903, vol. ii. p. 24.

Exmouth, Whitsand Bay, Plymouth, Fowey, Falmouth, and Scilly Isles (*A. M. N.*); Salcombe (*R. A. Todd*).

ÆGEON FASCIATUS (Risso).

Salcombe (*J. Alder*); Plymouth, 20 fathoms (*Bate*); Starcross, Falmouth, and Scilly Isles (*A. M. N.*).

ÆGEON SCULPTUS (T. Bell).

Plymouth, 20 fathoms (*Bate & Garstang*); Polperro and Falmouth (*A. M. N.*).

ÆGEON NANUS (Krøyer) = *Pontophilus bispinosus*, Hailstone.

Trawl-refuse; stomach of *Trigla lyra*, Falmouth (*Cocks*).

* I am not quite sure whether my own name or that of Sars should have precedence, as I know not the exact date of Sars's paper. *C. serratus* was described by me at the Brit. Assoc. Meeting of 1861, the same year as that of the paper of Sars.—*A. M. N.*

Fam. 10. NIKIDÆ.

NIKA EDULIS, Risso.

Torcross (*Montagu*); Start Bay (*A. M. N.*); Plymouth (*Bate*); Falmouth (*Cocks*).

NIKA COUCHII, T. Bell.

The type, and as yet the only recognized specimen, was procured by Couch on the coast of Cornwall.

Fam. 11. ALPHEIDÆ.

ALPHEUS RUBER, H. Milne-Edwards.

Plymouth, not uncommon in 30 fathoms (*Bate*); Polperro (*Laughrin, in Mus. Nor.*); Falmouth (*Cocks*).

ALPHEUS MACROCHELES (Hailstone).

1835. *Hippolyte rubra*, Westwood, Loudon's Mag. Nat. Hist. vol. viii. p. 272 (but not *A. ruber*, Milne-Edwards).

1835. *Hippolyte macrocheles*, Hailstone, *ibid.* p. 395.

1835. *Dienecia rubra*, Westwood, *ibid.* p. 552.

1837. *Alpheus Edwardsii*, Milne-Edwards, Hist. Nat. des Crust. vol. ii. p. 352 (but not of Audouin).

1846. *Cryptophthalmus ruber*, Costa, Fauna del Regno di Napoli, Crust. pl. vii. fig. 1.

1850. *Dienecia rubra*, White, Cat. Brit. Crust. in Brit. Mus. p. 41.

1854. *Alpheus affinis*, Guise, Ann. & Mag. Nat. Hist. ser. 2, vol. xiv. p. 275.

1857. *Alpheus affinis*, White, Popular Hist. Brit. Crust. p. 112.

1862. *Alpheus platyrhynchus*, Heller, "Beiträge zur näheren Kenntniss der Macrouren," Sitz. K. Akad. Wiss. Wien, Math.-naturw. Cl. vol. xlv. p. 400, pl. i. figs. 21-24.

1863. *Alpheus platyrhynchus*, Heller, Crust. südl. Europa, p. 276, pl. ix. figs. 18, 19.

1868. *Alpheus Edwardsii*, Bate, Brit. Assoc. Rep. for 1867, p. 283; and Ann. & Mag. Nat. Hist. ser. 4, vol. ii. p. 119.

1868. *Alpheus megacheles*, Norman, "British Species of *Alpheus*, *Typton*, and *Axius*," Ann. & Mag. Nat. Hist. ser. 4, vol. ii. p. 175 [*megacheles* by error for *macrocheles*].

Off the Dodman and off Plymouth, not uncommon (*Bate*). As there has been so much confusion with regard to this interesting species, the synonymy which was given in *A. M. N.*'s paper of 1868 is here repeated.

ATHANAS NITESCENS (*Montagu*).

Tide-marks, Exmouth and Salcombe (*A. M. N.*); Polperro (*Bate*); Falmouth (*Cocks*).

Fam. 12. HIPPOLYTIDÆ.

HIPPOLYTE VARIANS, Leach.

1853. *Hippolyte fascigera*, Gosse, Ann. & Mag. Nat. Hist. ser. 2, vol. xii. p. 153.
 1857. *Hippolyte varians*, Kinahan, Nat. Hist. Review, vol. iv. p. 158, pl. x. figs. 1-5. (Variations of rostrum.)
 1866. *Caradina tenuis*, Bate, "Carcinological Gleanings, No. 12," Ann. & Mag. Nat. Hist. ser. 3, vol. xvii. p. 27, pl. ii. fig. 1.
 1899. *Hippolyte varians*, Walker, Ann. & Mag. Nat. Hist. ser. 7, vol. iii. p. 149. (Woodcuts of variations of rostrum.)

Common among weeds everywhere. The above references will show some of the variations to which the rostrum is subject.

We know of no other Crustacean so remarkable for that striking variability in colouring which has long been remarked in *Hippolyte varians*, and which indeed gave it its most appropriate specific name. Messrs. Keeble and Gamble have recently studied with great care the causes of and the means by which these various colours are produced, and the result of their investigations is of so much importance, that it cannot but lead to great modification as to the views generally held with respect to coloration. These papers are:—Keeble and Gamble, "The Colour-Physiology of *Hippolyte varians*," Proc. Royal Soc. vol. lxxv. 1900, p. 461; and "The Colour-Physiology of Higher Crustacea," Phil. Trans. Royal Soc. ser. B, vol. cxvii. 1904, p. 295, and vol. cxviii. 1905, p. 1.

HIPPOLYTE PRIDEAUXIANA, Leach.

1815. *Hippolyte Prideauxiana*, Leach, Malac. Podoph. Brit. pl. xxxviii. figs. 1, 3, 4, 5.
 1815. *Hippolyte Moorii*, id. ibid. pl. xxxviii. fig. 2.
 1829. *Alpheus viridis*, Otto, "Besch. neuen im Mittelländischen Meere gefundener Crustaceen," Nov. Act. phys.-med. Acad. Cæs. Leop.-Car. Nat. Cur. vol. xiv. p. 338, pl. xx. fig. 4.
 1836. *Hippolyte Brullei*, Guérin, Expéd. de Morée, Crust. p. 41, pl. xxvii. fig. 2 a.
Hippolyte virescens, H. Milne-Edwards, Règ. Anim. Cuvier, pl. LIII. fig. 3.
 1845. ? *Hippolyte mauritanicus*, Lucas, Anim. artic. de l'Algérie, Crustacés, p. 42, pl. iv. fig. 3. (A tooth is on the carapace.)
 1853. *Hippolyte Prideauxiana*, Bell, Brit. Stalk-Eyed Crust. p. 292.
 1853. *Hippolyte Whitei*, W. Thompson (of Weymouth), "Desc. n. sp. British Crustacea," Ann. & Mag. Nat. Hist. ser. 2, vol. xii. p. 110, pl. vi. fig. 1.
 1853. *Hippolyte Mitchellii*, id. ibid. p. 114, pl. vi. fig. 4.
 1863. *Hippolyte viridis*, Heller, Crust. südl. Europa, p. 286, pl. x fig. 3.

1877. *Bellidia Huntii*, Gosse, Ann. & Mag. Nat. Hist. ser. 4, vol. xx. p. 313, pl. x. figs. a-e.

1878. *Bellidia Huntii*, Spence Bate, "On *Bellidia Huntii* of Gosse," Ann. & Mag. Nat. Hist. ser. 5, vol. ii. p. 135.

Stebbing (Hist. of Crustacea, 1893, p. 236) wrote :—"In the opinion of Czerniavsky, at least in 1869, *viridis* itself is a synonym of *Hippolyte Prideauxiana*." Lest anyone should be misled by supposing that Czerniavsky's figures relate to *H. viridis*, it may be as well to mention that in the work referred to, 'Materialia ad Zoographiam Ponticam comparatam,' Czerniavsky makes *viridis* and *Prideauxiana* synonyms of *Virbius gracilis*, Heller, and his figures are of that species, and not of *Prideauxiana*. In his later work, Fasc. ii. 'Crustacea Decapoda Pontica littoralia,' 1884, he corrects his synonymy, describing *Brullei* (= *viridis*) and *gracilis* as distinct species, and omitting *Prideauxiana* altogether from his synonymy.*

The usual colouring of this species is a brilliant green, but Gosse writes of his *Bellidia Huntii* :—"Colour a dark rich crimson-lake, marked on the cephalothorax and abdomen with well-defined vertical stripes of brilliant opaque white, imparting a zebra-like aspect to the creature. The head bears two longitudinal stripes of white on each side. The entire length of the back is dark red, with a broad white stripe running down the median line. All the limbs red. The ova of a dark sea-green hue." We have given Mr. Gosse's species as a synonym on Mr. Bate's authority, as we could not have guessed it from the description and figures.

Bantham and Plymouth (*Prideaux*, fide *Leach*); Devonshire (*Bell*); Torquay (*Gosse*); Plymouth and Scilly Isles (*A. M. N.*).

SPIRONTOCARIS SPINUS (Sowerby) = *S. securifons*, S. I. Smith (*non* Norman).

Plymouth, 30 fathoms (*Bate*). We should scarcely have expected this species to be found so far south.

SPIRONTOCARIS CRANCHII (Leach).

1815. *Hippolyte Cranchii*, Leach, Malac. Podoph. Brit. pl. xxxviii. figs. 17-21.

1816. *Palæmon microramphos*, Risso, Hist. Crust. Nice, p. 104.

* Mr. Walker has recorded *H. gracilis*, Heller, from Jersey, Ann. & Mag. Nat. Hist. ser. 7, vol. iii. 1899, p. 148, woodcut, fig. 2.

1837. *Hippolyte crassicornis*, H. Milne-Edwards, Hist. Nat. Crust. vol. ii. p. 375.
 1842. *Hippolyte nutila*, Krøyer, Monog. af Slægten *Hippolyte*'s Nordiske Arter, p. 294, pl. ii. figs. 38-44.
 1853. *Hippolyte Cranchii*, Bell, Brit. Stalk-Eyed Crust. p. 288.
 1853. *Hippolyte Farrellii*, W. Thompson, "Desc. new spec. Brit. Crust." Ann. & Mag. Nat. Hist. ser. 2, vol. xii. p. 112, pl. vi. fig. 2.
 1853. *Hippolyte Grayana*, id. ibid. p. 113, pl. vi. fig. 3 (monstrosity).
 1857. *Hippolyte Cranchii*, Kinahan, Nat. Hist. Review, vol. iv. p. 158, pl. x. figs. 7, 8.
 1863. *Hippolyte Cranchii*, Heller, Crust. südl. Europa, p. 283, pl. ix. fig. 24.
 1888. *Hippolyte Cranchii*, Gourret, "Revis. Crust. Podoph. Marseille," Ann. Mus. d'Hist. Nat. Marseille, Zoologie, vol. iii. p. 166, pl. xiv. figs. 18-27, pl. xv. figs. 1 & 20.

The type specimen was taken by Cranch in the Kingsbridge Estuary, and it is common all along the south-west coast.

SPIRONTOCARIS PUSIOLA (Krøyer).

1842. *Hippolyte pusiola*, Krøyer, Monog. af Slæg. *Hippolyte*'s Nordiske Arter, p. 319, pl. iii. figs. 69-73.
 1843. *Hippolyte subula*, H. Rathke, Beitr. zur Fauna Norwegens, p. 9.
 1843. *Hippolyte vittata*, id. ibid. p. 10.
 1857. *Hippolyte pusiola*, Kinahan, Nat. Hist. Review, vol. iv. p. 159, pl. ix. fig. 9 a-c, pl. x. figs. 9, 10.
 1879. *Hippolyte pusiola*, S. I. Smith, "Stalk-Eyed Crust. Atlantic Coast of N. America," Trans. Connect. Acad. vol. v. p. 77, pl. ix. figs. 4-7.

This species is entered in Spence Bate's list of the Crustacea of Plymouth Sound under the name *Hippolyte Barleei*, but without any observation (Jour. Marine Biol. Assoc. no. ii. 1888, p. 172). Ilfracombe, 1904 (*A. M. N.*).

It is *H. Barleei*, Bate, and *H. Andrewsii*, Kinahan.

Fam. 13. PANDALIDÆ.

PANDALUS MONTAGUI, Leach = *P. amulicornis*, Leach.

Common, north and south coasts.

PANDALINA BREVIROSTRIS (Rathke).

1843. *Pandalus brevirostris* Rathke, Beitr. z. Fauna Norwegens, p. 17.
 1853. *Hippolyte Thompsoni*, Bell, Brit. Stalk-Eyed Crust. p. 290.
 1850. *Pandalus Jeffreysii*, Bate, Notes Fauna of Swansea, Appendix, pl. iv. fig. 2; and 1859, Nat. Hist. Review, vol. vi. p. 100, and woodcuts.
 1861. *Pandalus Thompsoni*, Norman, "Contrib. Brit. Carcinology," Ann. & Mag. Nat. Hist. ser. 3, vol. viii. p. 279, pl. xiv. figs. 3-9.

1862. *Pandalus Rathkei*, Heller, "Unters. Litoralfauna adriat. Meeres," Sitz. K. Akad. Wiss. Wien, vol. xlv. p. 441, pl. iii. fig. 31.
 1863. *Pandalus brevirostris*, Heller, Crust. südl. Europa, p. 247, pl. viii. fig. 9.
 1883. *Pandalus brevirostris*, A. Milne-Edwards, Recueil de figures de Crust. nouveau ou peu connus.
 1899. *Pandalina brevirostris*, Calman, "On British Pandalidæ," Ann. & Mag. Nat. Hist. ser. 7, vol. iii. p. 37, pls. i.-iv. fig. 4.

Salcombe, near the Eddystone Lighthouse; Polperro, Falmouth (A. M. N.).

Fam. 14. PONTONIIDÆ.

TYPTON SPONGICOLA, O. G. Costa.

1846. *Typton spongicola*, O. G. Costa, Fauna del Regno di Napoli, Crust. pl. 6 bis. figs. 1-6.
 1856. *Pontonella glabra*, Heller, "Fauna del Adria," Verhandl. zool.-bot. Vereins Wien, p. 620, pl. ix. figs. 1-15.
 1861. *Alpheus Edwardsii*, Couch, Proc. Linn. Soc., Zool. vol. v. p. 210 (not *Alpheus Edwardsii*, Audouin, nor that of Milne-Edwards).
 1863. *Typton spongicola*, Heller, Crust. südl. Europa, p. 254, pl. viii. figs. 12-17.
 1868. *Typton spongiosus*, Bate, Brit. Assoc. Rep. for 1867, p. 283, and Ann. & Mag. Nat. Hist. ser. 4, vol. ii. p. 119.
 1868. *Typton spongicola*, Norman, Ann. & Mag. Nat. Hist. ser. 4, vol. ii. p. 176.

Rare within sponges, 4 fathoms, Plymouth (Bate); off the Mewstone, in *Desmacidon fruticosus*, Johnst. (Norman, 1889); off Polperro, in *Homodictya palmata* (= *Isodictya palmata*, Bow.) (Laughrin, in Mus. Nor.).

Fam. 15. PALÆMONIDÆ.

PALÆMON SERRATUS (Pennant).

Common.

PALÆMON SQUILLA, Leach.

Salcombe, Plymouth, Falmouth, Scilly Isles (A. M. N.); Polperro (Couch); Seaton, in the Axe; Starcross (Parfitt).

PALÆMONETES VARIANS (Leach).

1853. *Palæmon varians*, Bell, Brit. Stalk-Eyed Crust. p. 309.
 1857. *Palæmon lacustris*, Martens, Archiv f. Naturgesch. p. 153, pl. x.
 1862. *Pelias migratorius*, Heller, Sitz. K. Akad. Wiss. Wien, vol. xlv. p. 409, pl. ii. fig. 35.
 1863. *Anchistia migratoria*, Heller, Crust. südl. Europa, p. 259, pl. viii. fig. 20.

1869. *Palæmonetes varians*, Heller, "In den süßeren Gewässern des südlichen Europa vorkommen den Meeres-Crustaceen," Zeits. f. wiss. Zool. vol. xix. p. 157.

In brackish water at the Race Course at Plymstock, near Plymouth, and pond at Woolacombe, near Torquay (*A. M. N.*); Falmouth (*Cocks*); estuary of the Exe at the entrance of the Exter Canal, in drains at Seaton, the Axe, and at Topsham (*Parfitt*).

Order IV. SCHIZOPODA, Latreille.

The following publications should be consulted with reference to the Schizopoda in the following list, and references to them will not, as a rule, be given under the several species:—

- G. O. SARS.—Carcinologiske Bidrag til Norges Fauna. I. Monographi over de ved Norges kyster forekommende Mysider. Pt. i. 1870; Pt. ii. 1872; Pt. iii. 1879.
G. O. SARS.—Nye Bidrag til Kundskaben om Middelhavets Invertebrat-fauna. I. Middelhavets Mysider. 1876. Arch. f. Math. og Naturvidenskab.
A. M. NORMAN.—British Schizopoda of the Families Lophogastridæ and Euphausiidæ. Ann. & Mag. Nat. Hist. ser. 6, vol. ix. 1892, p. 454.
A. M. NORMAN.—British Mysidæ, a Family of Crustacea Schizopoda. Ann. & Mag. Nat. Hist. ser. 6, vol. x. 1892, pp. 143 & 242.

The records to which the name of Mr. W. I. Beaumont is attached are often taken from "HOLT (E. W. L.) and BEAUMONT (W. I.), 'Report on the Crustacea Schizopoda of Ireland' in 'Studies from the Marine Laboratory of the Dublin Royal Society,' vol. i. pt. 1." Sci. Trans. Royal Dublin Soc. ser. 2, vol. vii. 1900 (references here are to a separate copy).

Tribe I. EUPHAUSIACEA.

Fam. 1. EUPHAUSIIDÆ.

NYCTIPHANES COUCHII (Bell).

1900. *Nyctiphanes Couchii*, Holt & Beaumont, l. c. p. 5, and p. 30; pl. xvi. fig. 1, and woodcuts, p. 6.

Common off the south coasts of Devon and Cornwall.

Some of the specimens originally taken by Couch in stomachs of mackerel at Polperro are in A. M. N.'s collection, as well as others taken by Laughrin at Polperro; by Dr. Day off the Cornish coast, in 1881; while Dr. L. H. Gough constantly takes it in the tow-nets. Mr. Beaumont records it from off Penlee Point and Cawsand Bay, Plymouth.

EUPHAUSIA MÜLLERI, Claus.

1868. *Euphausia Mülleri*, Claus, "Einige Schizopoden und niedere Malacostraken Messina's," Zeits. f. wiss. Zool. vol. xiii. p. 442, pl. xxviii. figs. 29-31, pl. xxix. figs. 1-34.

1882. *Thysanopoda bidentata*, G. O. Sars, "Oversigt Norges Crustaceer, i. Podophthalma &c.," Christ. Vidensk.-Selsk. Forhandl. p. 52, pl. i. figs. 16-18.

As in a previous publication A. M. N. gave characters of the then known British Schizopoda, it may be well here to add a description of *Euphausia* and its species, which is taken for the most part from Sars. But Dr. H. J. Hansen has just published a paper (Bull. du Mus. Océanographique de Monaco, No. 42, July 1905) which throws much light on the genus *Euphausia*, and therefore the name *E. Mülleri* is here employed, and not *E. pellucida*.

"*Euphausia*. Carapace with antero-lateral angles but slightly produced; rostral projection, as a rule, small. Tail powerfully developed. Eyes of normal structure. Antennular peduncle alike in both sexes, cylindrical, basal joint sometimes provided at the end superiorly with a small lappet; both flagella elongate and consisting of numerous joints. Second maxillæ with terminal joint very broad, exognath comparatively small. First pair of legs nearly similar in structure to maxillipeds and succeeding legs, save that the terminal joint is somewhat expanded and armed with a fascicle of short spines. The last two pairs of legs are quite rudimentary, being present only as a minute setiferous process."

These are the main characters. The genus is distinguished from *Nyctiphanes* chiefly in having the *last two* pairs of legs quite rudimentary, whereas in *Nyctiphanes* only the *last pair* are rudimentary; the penultimate pair being developed, but having the outer joints confluent.

The following specific characters of *Euphausia Mülleri* are the most important:—Carapace distinctly keeled on its anterior portion, terminating in a sharp-pointed rostrum which reaches to the middle of the basal joint of the antennules. Sides of the carapace bearing two pairs of spines near the lower margin. Antennules bearing a small lappet which is straight or slightly convex distally, and deeply pectinate with several (6-8) setiform denticles, its outer angle is produced into a narrow process with about three similar denticles. No spine over the base of the telson; below there is a præanal spine which is pectinated. Telson extending beyond the uropods; the lateral spine processes very strong, and finely denticulated on the inner edge.

Dr. Gough sent us a specimen for examination which had been taken in August 1903, in the tow-net, at Stat. 5 of the International Fisheries Commission, that is to the south of the Scilly Isles.

It had previously been added to the British fauna by the cruise of the 'Oceana,' when it was captured by Mr. G. Murray at Stat. 2 of that cruise, lat. $52^{\circ} 45'$ N., long. $12^{\circ} 27'$ W. (*cf.* Holt & Beaumont, l. c. p. 30).

RHODA INERMIS (Kröyer).

1892. *Boreophausia inermis*, Norman, l. c. p. 461.

The genus *Rhoda*, Sim, was instituted in 1872, and we quite agree with those who have used this name instead of *Boreophausia*, Sars, 1883. The type species is *Rhoda Raschii*, M. Sars = *Rhoda Jardineana*, Sim.

This has been taken twice by Dr. Gough in his tow-nettings, in Feb. 1904 at Stat. 5, which is south of the Scilly Isles, and in Nov. 1903 at Stat. 4. This last station is further south, nearer the French coast and beyond the British area.

Tribe II. MYSIDACEA.

Fam. 1. SIRIELLIDÆ*.

[SIRIELLA NORVEGICA, G. O. Sars.

Taken in the tow-net by Dr. Gough in November 1903, at Stations 3 and 4; the former is off Ouessant, the latter at the entrance of the English Channel; both stations are south of the British area, but so near to it that there is every probability of the species being taken off the Cornish coast.]

SIRIELLA CLAUSI, G. O. Sars.

Near Drake Island, and in Whitsand Bay, Plymouth, 1889 and 1903; Scilly Isles (*A. M. N.*).

SIRIELLA JALTENSIS, Czerniavsky = *S. crassipes*, G. O. Sars.

Staracross, 1883; Plymouth, 1889 and 1903 (*A. M. N.*). Abundant among weeds on shores of Drake Island, Plymouth (*Garstang*, iii. p. 221).

* I am of opinion that the Subfamilies as used in my papers of 1892 should be raised to the rank of Families.—*A. M. N.*

SIRIELLA ARMATA (H. Milne-Edwards).

1888. *Siriella intermedia*, Gourret, "Revis. Podophthalmes du Golfe de Marseille," Ann. Mus. d'Hist. Nat. Marseille, Zool. vol. iii. p. 183, pl. xvii. figs. 7-17, pl. xviii. fig. 1.

West of Starcross, 1883; Plymouth, chiefly in Whitsand Bay, 1889 and 1903; Fowey, 1903 (*A. M. N.*). In spawn at Plymouth, June (*Garstang*).

[A half-grown female of this species, taken at Plymouth in 1889, was erroneously recorded (Ann. & Mag. Nat. Hist. ser. 6, vol. ix. 1892, p. 153) by A. M. N. as *Siriella frontalis*; but the description of *S. frontalis* in that paper is correct. This last species has not, it would seem, as yet been found in the British seas, as in all probability the insufficiently described *Mysis Griffithsiae* of Bell and *Mysis producta* of Gosse are referable to *S. armata*. The correction as regards the occurrence of *S. frontalis* has been already made by Holt and Beaumont (Ann. & Mag. Nat. Hist. ser. 7, vol. iii. 1899, p. 151).]

Fam. 2. GASTROSACCIDÆ.

GASTROSACCUS SANCTUS (P. J. van Beneden).

Abundant in Whitsand Bay, Plymouth, in August 1903 (*A. M. N.*). A young specimen, taken in tow-net by Dr. Gough, Nov. 1903, at Stat. 8, off the Cornish coast. In spawn at Plymouth, August (*Garstang*).

GASTROSACCUS SPINIFER (Goës).

Starcross (*C. Parker, in Mus. Nor.*). Nine were taken on the gravel on the west side of Bullhill Bank, estuary of the Exe (*R. A. Todd*, vi. 1904, p. 323); Padstow, 1903 (*A. M. N.*).

HAPLOSTYLUS NORMANI (G. O. Sars).

1880. *Haplostylus Normani*, Kossman, Zool. Ergeb. Reise in die Küstengebiete des Rothen Meeres, Zweite Hälfte, p. 95.

1892. *Gastrosaccus Normani*, Norman, "British Mysidæ," Ann. & Mag. Nat. Hist. ser. 6, vol. x. p. 155.

1900. *Haplostylus Normani*, Holt & Beaumont, Studies Marine Laboratory of Dublin Roy. Soc. vol. i. pt. 1: "Report Schizopoda of Ireland," p. 9 (separate copy).

Plymouth, with spawn (*Garstang*, iii. p. 227).

ANCHIALINA * AGILIS (G. O. Sars).

Near the Eddystone Lighthouse, 1889, and Whitsand Bay, Plymouth, 1903 (*A. M. N.*, Journ. vol. i. n. s. p. 117).

* Nom. nov. = *Anchialus*, Kröyer, 1861 (nec *Anchialus*, Thompson (Coleoptera), 1859).

Fam. 3. HETEROMYSIDÆ.

HETEROMYSIS FORMOSA, S. I. Smith = *Heteromysis norvegica*,
G. O. Sars.

Plymouth, rare, 1889 and 1903 (*A. M. N.*); Millbay Channel, New Grounds, Cawsand Bay, the Yealm and off Stoke Point, all near Plymouth, and with spawn in October and November (*Garstang*).

Fam. 4. LEPTOMYSIDÆ.

ERYTHROPS ELEGANS, G. O. Sars = *Nematopus pygmaeus*,
G. O. Sars.

Near Eddystone Lighthouse, 1908 (*A. M. N.*); with spawn in October at Plymouth (*Garstang*, iii. p. 227); Exmouth, 1904 (*A. M. N.*).

MYSIDOPSIS ANGUSTA, G. O. Sars.

Start Bay, 1898, and off Plymouth (*Holt & Beaumont*, v. p. 344).

MYSIDOPSIS GIBBOSA, G. O. Sars.

Exmouth and Fowey (*A. M. N.*); fine gravel and sandy ground off Blackpool, and Slapton Sands in Start Bay in 5-8 fathoms (*Holt & Beaumont*, v. p. 344); spawning in Cawsand Bay, Plymouth Sound, in July (*Garstang*, iii. p. 221).

LEPTOMYSIS GRACILIS, G. O. Sars.

Plymouth, Oct. 1893 (*Garstang*, iii. p. 221).

LEPTOMYSIS MEDITERRANEA, G. O. Sars.

Teignmouth Bay and Plymouth (*A. M. N.*); common, Cawsand Bay, Plymouth Sound, and spawning in October (*Garstang*, iii. pp. 221 & 227); Exe Estuary, in 2-3 fathoms (*R. A. Todd*, vi. p. 323).

LEPTOMYSIS LINGVURA, G. O. Sars.

1888. *Leptomysis Marioni*, Gourret, "Revis. Podophthalmes du Golfe de Marseille," Ann. Mus. d'Hist. Nat. Marseille, Zool. vol. iii. p. 185, pl. xviii. figs. 8-14.

1900. *Leptomysis lingvura*, Holt & Beaumont, Studies Marine Lab. of Dublin Roy. Soc.: "Report Schizopoda of Ireland," p. 17.

Teignmouth Bay; Whitsand and Bovisand Bays near Plymouth, 1889 and 1903 (*A. M. N.*); off Pole Sands, in the Exe Estuary, 2-3 fathoms (*R. A. Todd*, vi. p. 323).

Fam. 5. MYSIDÆ.

HEMIMYSIS LAMORNÆ (Couch).

Cornwall (*Couch*, the type specimen). Plymouth and Falmouth (*A. M. N.*).

MESOPODOPSIS SLABBERI (P. J. van Beneden).

Falmouth (*G. C. Bourne*); Whitsand Bay, Plymouth, 1903 (*A. M. N.*); River Tamar above Saltash, fine and abundant (*Biol. Lab.*).

MACROMYSIS FLEXUOSA, Müller.

Very common in the Laminarian Zone.

A most valuable and deeply interesting paper upon the coloration and chromatophores of Crustacea, and especially of the Mysidea, has recently been published by Messrs. Keeble and Gamble, "The Colour-Physiology of Higher Crustacea," *Phil. Trans. Roy. Soc. ser. B*, vol. cxevi. 1904, pp. 295-388.

The Rev. T. R. R. Stebbing, in his 'History of the Crustacea,' has written:—"Macromysis must yield to the rather queer but much earlier name *Praunus*, Leach, 1813, of which the unabashed author himself remarks that 'this genus was instituted by Leach, who has derived the name from the English word Prawn'." Leach assigned two species to the genus—*P. flexuosus*, Müller, and *P. integer*, Leach, and instituted the genus because he thought that it was different from *Mysis*, Latreille. He immediately afterwards recognized his mistake, and in all his subsequent writings he uses Latreille's genus *Mysis* with his own *Praunus* as a synonym. There is no character given for his genus *Praunus* which would distinguish it from *Mysis*, it was an absolute synonym. It would be laughable, indeed, if in the year 1904 we had to call a Mysidean a *Prawn*! Luckily, there is not an iota of ground for such a calamity.

MACROMYSIS NEGLECTA (G. O. Sars).

1900. *Macromysis neglecta*, Holt & Beaumont, *l. c.* p. 19.

1904. *Macromysis nigra*, Keeble & Gamble, "Colour-Physiology of Higher Crustacea," *Phil. Trans. Roy. Soc. ser. B*, vol. cxevi., especially pp. 331, 332, and 354, pls. xviii., xix., xxi. figs. 10, 11, 17.

We do not understand the grounds on which the name *M. nigra* is proposed to be substituted for that of *M. neglecta*. The difference in the chromatophore-system in *M. flexuosa* and *M. neglecta* is as follows:—"Each breeds true. Each possesses before birth its own system of centres and branches

which persist throughout life in both sexes. The chief difference is that in one type, the neural centres are paired throughout the thoracic region ; but only occur opposite to the third, sixth, and eighth appendages in the other type. The first type we call *M. flexuosa*, the second *M. nigra*" (*Keeble & Gamble*).

Abundant about Drake Island, Plymouth, and Starcross (*A. M. N.*); Salcombe (*Beaumont*, vi. p. 202).

MACROMYSIS INERMIS (*Rathke*).

A common species. Salcombe, Plymouth, Scilly Isles (*A. M. N.*); with spawn at Plymouth in June (*Garstang*).

SCHISTOMYSIS SPIRITUS, *Norman*.

Plymouth Sound and Whitsand Bay (*A. M. N.*, 1903); with spawn at Plymouth in June, July, and August (*Garstang*, iii. p. 227).

SCHISTOMYSIS PARKERI, *Norman*.

1892. *Schistomysis Parkeri*, *Norman*, "On British Mysidæ," *Ann. & Mag. Nat. Hist.* ser. 6, vol. x. p. 256, pl. x. figs. 1-7.

The types were taken by Mr. C. Parker near Starcross, in 1884. Plymouth (*from Biol. Lab. in Mus. Nor.*); one taken between Pole and Monster Sands in the Exe Estuary (*Todd*, vi. p. 324) ; St. Ives, 1905 (*Vallentin*!).

SCHISTOMYSIS ORNATA (*G. O. Sars*).

A young specimen was sent to A. M. N. by Dr. Gough, which had been taken in the tow-net at Stat. 7 (*Internat. Comm.*), that is off Mounts Bay, November 1903. Off Plymouth and in the Tamar Estuary (*Holt & Beaumont*).

SCHISTOMYSIS HELLERI (*G. O. Sars*).

Starcross and Plymouth (*A. M. N.*); Salcombe (*W. I. Beaumont*, vi. pp. 202 & 324).

SCHISTOMYSIS ARENOSA (*G. O. Sars*).

Starcross, 1884 (*C. Parker, in Mus. Nor.*); Whitsand Bay (*A. M. N.*); Salcombe (*Beaumont*, vi. p. 202); with spawn at Plymouth in June (*Garstang*, iii. p. 227).

ACANTHOMYSIS LONGICORNIS (*H. Milne-Edwards*).

1837. *Mysis longicornis*, *H. Milne-Edwards*, *Hist. Nat. des Crust.* vol. ii. p. 459, pl. xxvi. figs. 7-9.

1840. *Mysis longicornis*, *Heller*, *Crust. südl. Europa*, p. 302.

1876. *Mysis longicornis*, *G. O. Sars*, "Nye Bidrag til Kunds. om Middelhavets Invertebratfauna, I. Middelhavets Mysider," *Archiv f. Math. og Naturvid.* p. 22, pls. ix. & x.

1882. *Acanthomysis spinosissima*, Czerniavsky, Monog. Mysidarum imprimis Imperii Rossici, Fasc. i. p. 135, pl. xxxi. figs. 17-25, pl. xxxii. figs. 1-18.
 1882. *Acanthomysis platydens*, id. ibid. p. 135.
 1883. *Acanthomysis longicornis*, id. ibid. Fasc. iii. p. 75.
 1899. *Mysis longicornis*, Walker, Report Marine Biol. Stat. Port Erin, p. 15.
 1900. *Dasymysis longicornis*, Holt & Beaumont, l. c. p. 25.

Found in some abundance in Start Bay, S. Devon, at the end of July 1898. It was taken on fine gravel and sandy ground off Blackpool and Slapton Sands, in from 5-8 fathoms, in company with *Mysidopsis gibbosa* and *M. angusta* (Holt & Beaumont, v. p. 344); also recorded by the same naturalists from off Plymouth. Messrs. H. & B. thought—and had reason to think—that *A. longicornis* was an addition to our fauna when found by them; but by a curious coincidence, only one month before, on June 10, 1899, it was taken in a bottom tow-net in 20 fathoms at Bull Bay, Anglesey, by Mr. A. O. Walker.

NEOMYSIS VULGARIS (J. V. Thompson).

Starcross, Kingsbridge Estuary; Plymstock, near Plymouth (*A. M. N.*); Topsham (*d'Urban*); near Powdersham, Exe Estuary (*Todd*, vi. p. 324).

Order V. STOMATOPODA, Burmeister.

Fam. SQUILLIDÆ.

SQUILLA MANTIS, Rondeletius.

The only known British specimens of this species are those recorded by Bell as having been obtained by Mr. Couch and “brought from the distance of about a couple of leagues”—from the Cornish coast—“where the bottom is rocky, with some spots of sand.”

SQUILLA DESMARESTII, Risso.

The first British specimen was obtained from the Cornish coast by Mr. Couch, and *A. M. N.* has received others procured by Laughrin at Polperro about forty years ago.

Subclass II. *EDRIOPHTHALMA*.Order VI. **SYMPODA**, Stebbing,
= **Cumacea**.Fam. 1. **BODOTRIIDÆ**.**BODOTRIA SCORPIOIDES** (Montagu).

1808. *Cancer (Astacus) scorpoides*, Montagu, Trans. Linn. Soc. vol. ix. p. 70, pl. vi. fig. 5.
 1843. *Cuma Edwardsii*, Goodsir, Edinb. New Philos. Jour. vol. xxxiv. p. 5 (separate copy), pl. ii. figs. 1-13, 18, pl. iv. fig. 11.
 1853. *Cuma Edwardsii*, Bell, Brit. Stalk-Eyed Crust. p. 316, and woodcuts under *Cuma Audouinii* (not those under *C. Edwardsii*, which are *Audouinii*).
 1869. *Cuma scorpoides*, Norman, "Last Report Dredging Shetland," Brit. Assoc. Rep. for 1868, p. 273.
 1879. *Cuma Edwardsii*, G. O. Sars, "Nye Bidrag til Kunds. om Middelhavets Invertebratfauna, II. Middelhavets Cumaceer," p. 10, pls. i., ii., iii.
 1899. *Cuma Edwardsii*, G. O. Sars, Crustacea of Norway, vol. iii. Cumacea, p. 12, pl. iii.

Ilfracombe, Exmouth, Teignmouth Bay, Dartmouth, Scilly Isles (A. M. N.); males in tow-net off Devon coast (St. 19, Intern. Comm.), Feb. 1904 (*Dr. Gough*).

IPHINOË TRISPINOSA (H. Goodsir).

1843. *Cuma trispinosa*, H. Goodsir, Edinb. New Phil. Jour. vol. xxxiv. p. 8 (separate copy), pl. iii. figs. 1-7.
 1853. *Cuma trispinosa*, Bell, Brit. Stalk-Eyed Crust. p. 329.
 1856. *Halia trispinosa*, Bate, "The British Diastylidæ," Ann. & Mag. Nat. Hist. ser. 2, vol. xvii. p. 458, pl. xiv. & pl. xv. fig. v.
 1856. *Iphinoë trispinosa*, Bate, *ibid.* vol. xviii. p. 187.
 1856. *Venilia gracilis*, Bate, *ibid.* vol. xvii. p. 460, pl. xv. fig. vii., ♂.
 1856. *Cyrianassa gracilis*, Bate, *ibid.* vol. xviii. p. 187, ♂.
 1869. *Iphinoë gracilis*, Norman, "Last Report Dredging Shetland," Brit. Assoc. Rep. for 1868, p. 272, ♂.
 1899. *Iphinoë trispinosa*, G. O. Sars, Crust. Norway, vol. iii. Cumacea, p. 14, pls. v. & vi.

Exmouth, Teignmouth Bay, Plymouth, Scilly Isles (A. M. N.).

CUMOPSIS LONGIPES (Dohrn).

1870. *Cuma (Bodotria) longipes*, A. Dohrn, Untersuchungen über Arthropoden, i. pl. iii. figs. 1, 16, 17, ♂.
 1879. *Cumopsis laevis*, G. O. Sars, "Nye Bidrag til Kunds. om Middelhavets Invertebratfauna, II. Middelhavets Cumaceer," p. 60, pl. xxii.

Woolacombe and Saunton Sands, Devon (*Stebbing*).

CUMOPSIS GOODSIRI (P. J. van Beneden).

1860. *Bodothria Goodsiri*, P. J. van Beneden, Recherches sur la faune littoral de Belgique, Crustacés, p. 76, pl. xiii., ♂ (young and adult).
 1870. *Cuma Goodsiri*, A. Dohrn, Untersuchungen über Arthropoden, i. p. 3 (note), pl. ii. & pl. iii. figs. 16, 17.
 1879. *Cumopsis Goodsiri*, G. O. Sars, "Middelhavets Cumaceer," p. 52, pls. xix., xx., xxi.

Padstow, North Cornwall, and Whitsand Bay, near Plymouth (*A. M. N.*).

The spination of the uropods in the Cornish females differs considerably from the figure of these organs given by Sars.

Fam. 2. LEUCONIDÆ.

EUDORELLA TRUNCATULA (Bate).

1858. *Eudora truncatula*, Bate, "On British Diastylidæ," Ann. & Mag. Nat. Hist. ser. 2, vol. xvii. p. 457, pl. xiv. fig. iii.
 1867. *Eudorella truncatula*, Norman, Brit. Assoc. Rep. for 1866, p. 197 (note).
 1871. *Eudorella truncatula*, G. O. Sars, "Besk. af de 'Josephine' Exped. fundne Cumaceer," K. Svensk. Vet.-Akad. Handl. vol. ix. pl. xviii. fig. 99.
 1877. *Eudorella inermis*, Meinert, "Crust. Isop. Amphip. et Decap. Daniæ," Naturhist. Tidssk. ser. 3, vol. xi. p. 183, ♂, and *E. truncatula*, p. 183, ♀.
 1879. *Eudorella truncatula*, G. O. Sars "Middelhavets Cumaceer," p. 86, pls. xxx., xxxi., xxxii.
 1900. *Eudorella truncatula*, G. O. Sars, Crust. Norway, vol. iii. Cumacea, p. 37, pl. xxix.

The type specimens described by Bate were taken in Plymouth Sound by Mr. W. Webster. Exmouth, Dartmouth, Teignmouth Bay, and Plymouth (*A. M. N.*).

Fam. 3. DIASTYLIDÆ.

DIASTYLIS RATHKEI (Kröyer).

1841. *Cuma Rathkei*, Kröyer, Naturh. Tidssk. vol. iii. p. 513, pls. v. & vi. figs. 17-30, and ser. 2, vol. ii. pp. 144 & 207, pl. i. figs. 4, 6; and Voyages en Scandinavie, &c. pl. v. figs. 1 a-u.
 1846. *Cuma angulata*, Kröyer, Naturhist. Tidssk. ser. 2, vol. ii. pp. 156 & 206, pl. i. fig. 2; pl. ii. figs. 1 a-i; and Voyages en Scandinavie, &c. pl. v. figs. 2 a-x, ♂.
 1853. *Alauna rostrata* (Goodsir), Bell, Brit. Stalk-Eyed Crustacea, p. 330.
 1858. *Diastylis Rathkei*, Bate, "On British Diastylidæ," Ann. & Mag. Nat. Hist. ser. 2, vol. xvii. p. 451, pl. xiii. figs. 1-21.
 1873. *Diastylis Rathkei*, G. O. Sars, "Cumaceer fra de store Dybder

i Nordishavit," K. Svenska Vet.-Akad. Handl. vol. xi. p. 7, pl. iii. figs. 8, 9 (young specimen).

1900. *Diastylis Rathkei*, G. O. Sars, Crust. Norway, vol. iii. Cumacea, pp. 44 & 107, pls. xxxiii., xxxiv., lxx.-lxxii.

Falmouth (*W. Webster*, fide *Bate*); Plymouth, from trawlers' refuse (*Bate*); Exmouth and Torbay (*A. M. N.*).

DIASTYLIS LÆVIS, Norman.

1869. *Diastylis lævis*, Norman, "Last Report Dredging Shetland," Brit. Assoc. Rep. for 1868, p. 270.

1879. *Diastylis lævis*, Norman, "Crustacea Cumacea of 'Lightning' &c. Expeditions," Ann. & Mag. Nat. Hist. ser. 5, vol. iii. p. 60.

1900. *Diastylis rostrata*, G. O. Sars, Crust. Norway, vol. iii. Cumacea, p. 51, pl. xxxix. (nec *Alauna rostrata*, Goodsir).

Professor Sars has considered *Alauna rostrata*, Goodsir, to be the same as *D. lævis*, Norman; but before the last-named species was published Bate had synonymized *A. rostrata* with *C. Rathkei*, Krøyer. Which author is right? We believe the latter. At first sight indeed Goodsir's figure, with its perfectly smooth surface, looks more like *D. lævis*. But it must be borne in mind that such minutiae as a few small spines on the carapace would be passed over as of no importance; and the truth of this observation is proved by the fact that that excellent author Krøyer gives figures of his type *Cuma Rathkei* which present an absolutely spineless carapace, similar to the figure of Goodsir. But the figure which Goodsir gives of the first peræopod clearly shows that the species he was describing was *D. Rathkei* and not *D. lævis*. The basal joint of this first peræopod is represented with a spinose margin. Compare this with Sars's description of the same part in the two species:—*D. Rathkei*: "First pair of legs . . . basal joint . . . denticulate in its distal part"; and in his "Aberrante Krebsdyrgruppe Cumacea," 1864, he more fully describes the joint: "Pedum 1mo paris articulus basalis . . . setis numerosis et plumosus ad marginem et inferiorem et superiorem obsitus dentibusque præterea armatus 14-16 marginis interioris." *D. lævis* (*rostrata*, Sars): "First pair of legs . . . basal joint densely fringed with plumose setæ." It is true that Norman in his description of this part in *D. lævis* wrote: "First feet with the first joint . . . both margins furnished with plumose setæ, spinous on the side"; but these spinules of the *side* are quite inconspicuous and would not have been noticed by Goodsir any more than they are by Sars, while the stronger spinose *margin* of *D. Rathkei* seems certainly to be that indicated in Goodsir's illustration.

Start Bay and Salcombe (*A. M. N.*).

DIASTYLIS BRADII, Norman.

1879. *Diastylis Bradii*, Norman, "Cumacea of 'Lightning,' &c.," Ann. & Mag. Nat. Hist. ser. 5, vol. iii. p. 59.

1888. *Diastylis Bradii*, A. O. Walker, "Report on Crustacea of Liverpool Bay, 1886-1887," Proc. Biol. Soc. Liverpool, vol. ii. p. 175, pl. xiii. figs. 10, 11.

Teignmouth Bay, Salcombe, Plymouth, especially Whitsand Bay (*A. M. N.*).

DIASTYLIS LUCIFERA (Kröyer).

1841. *Cuma lucifera*, Kröyer, Naturhist. Tidssk. vol. iii. pp. 527 & 531, pl. vi. figs. 34, 35; and ser. 2, vol. ii. 1846, pp. 171 & 207; and Voyages en Scandinavie, &c. pl. iii. fig. 3.

1864. *Diastylis lucifera*, G. O. Sars, "Aberrante Krebsdyrgruppe Cumacea," Vid. Selskab. Forhandl. p. 36.

1900. *Diastylis lucifera*, G. O. Sars, Crust. Norway, iii. Cumacea, p. 49, pl. xxxviii.

Near Starcross, Plymouth (*A. M. N.*).

DIASTYLIS RUGOSA, G. O. Sars.

1864. *Diastylis rugosa*, G. O. Sars, "Aberrante Krebsdyrgruppe Cumacea," p. 41.

1879. *Diastylis strigata*, Norman, "Crustacea Cumacea of 'Lightning,' &c.," Ann. & Mag. Nat. Hist. ser. 5, vol. iii. p. 62, ♂.

1900. *Diastylis rugosa*, G. O. Sars, Crust. Norway, iii. Cumacea, p. 48, pl. xxxvii.

Taken at Exmouth in 1904 (*A. M. N.*).

Fam. 4. PSEUDOCUMIDÆ.

PSEUDOCUMA LONGICORNIS (J. V. Thompson).

1858. *Cyrianassa longicornis* (J. V. Thompson), Bate, Nat. Hist. Review, vol. v. p. 204, and woodcut ♂.

1860. *Leucon cercaria*, Van Beneden, Recher. sur la faune litt. de Belgique, Crustacés, p. 85, pl. iv.

1864. *Pseudocuma bistrigata*, G. O. Sars, "Aberrante Krebsdyrgruppe Cumacea," Vid. Selskab. Forhandl. p. 70.

1877. *Cuma bella*, Meinert, "Crust. Isop. Amphip. et Decap. Daniae," Naturhist. Tidssk. ser. 3, vol. x. p. 179.

1900. *Pseudocuma cercaria*, G. O. Sars, Crust. Norway, iii. Cumacea, p. 76, pl. liii.

The most common of the Cumaceans of Devon and Cornwall. Ilfracombe, Exmouth, Teignmouth Bay, Torbay, Plymouth, Scilly Isles (*A. M. N.*).

Fam. 5. NANNASTACIDÆ.

CUMELLA PYGMÆA, G. O. Sars.

1864. *Cumella pygmæa*, G. O. Sars, "Aberrante Krebsdyrgruppe Cumacea," Vid. Selsk. Forhandl. p. 74.
 1869. *Cumella agilis*, Norman, "Last Report Dredging Shetland," Brit. Assoc. Rep. for 1868, p. 272, ♂.
 1879. *Cumella pygmæa*, G. O. Sars, "Middelhavets Cumaceer," Arch. f. Math. og Naturvid. p. 146, pls. 1-liv.
 1900. *Cumella pygmæa*, G. O. Sars, Crust. Norway, iii. Cumacea, p. 81, pl. lv.

Ilfracombe, Salcombe, Plymouth in Whitsand Bay, &c. (A. M. N.).

NANNASTACUS UNGUICULATUS, Bate.

1859. *Cuma unguiculata*, Bate, Ann. & Mag. Nat. Hist. ser. 3, vol. iii. p. 273, and woodcut, ♀.
 1865. *Nannastacus binoculoides*, Bate, "Carcinological Gleanings," No. 1, Ann. & Mag. Nat. Hist. ser. 3, vol. xv. p. 87, pl. i. fig. 4, ♂.
 —? *Diops parvulus*, Paulisona, Izsljedovanija rakoobrazujikh krasnago morja, p. 128, pl. xix. figs. 1-1 r (fide Sars).
 1879. *Nannastacus unguiculatus*, G. O. Sars, "Middelhavets Cumaceer," Arch. f. Math. og Naturvid. p. 161, pls. lv-lvii.

Whitsand Bay, Plymouth (A. M. N.).

Order VII. ISOPODA, Latreille.

Tribe I. CHELIFERA, G. O. Sars.

Fam. 1. APSEUDIDÆ.

APSEUDES TALPA (Montagu).

Salcombe (Montagu & A. M. N.); Plymouth (Barlee, fide Bate & Garstang, ii. p. 337, and iii. p. 221).

APSEUDES LATREILLII (H. Milne-Edwards).

Salcombe, mouth of the Yealm, and Plymouth (A. M. N.).

Fam. 2. TANAIDÆ.

TANAIS CAVOLINII (H. Milne-Edwards).

For synonyms and references see Norman, "British Isopoda Chelifera," Ann. & Mag. Nat. Hist. ser. 7, vol. iii.

1899, p. 332. It is *Tanais tomentosus* of Kröyer and Sars ; *T. vittatus*, Rathke and auct. ; but not *T. Carolinii* of G. O. Sars's Mediterranean monograph.

Ilfracombe (*A. M. N.*) ; piles on shore at Torbay Abbey and at Salcombe (*Stebbing*) ; Polperro (*Laughrin*, fide *Bate*).

TANAIS DULONGII (Audouin).

1866. *Tanais Dulongii*, Bate & Westwood, vol. ii. p. 129.

"The only individuals which we have seen were sent to us from Polperro by Mr. Laughrin" (*Bate & Westwood*).

LEPTOCHELIA DUBIA (Kröyer).

1886. *Leptochelia algicola*, G. O. Sars, "Middelhavets Saxipoder (Isopoda Chelifera)," Arch. for Math. og Naturvid. Christiania, 1886, p. 317, pls. x., xi.

For full synonymy see Norman's paper previously referred to. It is *Paratanais algicola* of Harger, and *Tanais Savignii* of Dohrn (but not of Kröyer).

Falmouth Harbour, 1884, and Plymouth Sound, 1903 (*A. M. N.*).

Genus TANAISSUS, gen. nov.

General form much elongated, especially the cephalosome, which is also constricted anteriorly in ♀, and much more so in ♂. Antennules in ♀ four-jointed ; the first joint very long, the terminal joint microscopic. Antennæ very short, shorter than the basal joint of the antennules. No eyes. Maxillæ strongly curved distally. Maxillipeds having the penultimate joint without spines or setæ, twice as long as terminal joint. Gnathopods in ♀ of ordinary character, but in ♂ the propodus widens greatly at the extremity, forming a broad transverse palm. Uropods with the inner, as well as the outer, ramus few-jointed.

TANAISSUS LILLJEBORGH (Stebbing). (Pl. I. figs. 1-7.)

1891. *Leptognathia Lilljeborgii*, Stebbing, "Sessile-Eyed Crustacea," Ann. & Mag. Nat. Hist. ser. 6, vol. viii. p. 328, pl. xvi.

Female. Cephalosome narrowed in front, but much more so throughout the greater part of its length in the male. The first segment of mesosome is the shortest, the following four are subequal in length. The antennules are four-jointed ; the first joint longer than the combined length of the rest, the last joint quite microscopic. The antennæ are remarkable on account of their not even reaching the end of the basal

joint of the antennules. The first gnathopods are massive; the large thumb is projected sideways, forming an angle with the anterior part of the hand, it carries two or three setæ and a small nail at the extremity; this finger has its outer margin tuberculated. The second gnathopods are almost entirely devoid of setæ; the meros, carpus and propodos subequal in length; the dactylus is not half as long as the preceding joint, and consists of two parts, the distal portion slightly curved, and the extremity not acute. Uropods with both rami two-jointed; joints of the inner branch very long, the outer branch shorter than the first joint of the inner branch.

In the *male* the antennules are six-jointed, the first joint exceeds in length the combined length of the rest; as in the female, the antennæ do not reach the extremity of the basal joint of the antennules. The first gnathopods have the hand greatly expanded distally in the form of a broad transverse palm which has a protuberance near the base of the finger, this is followed by a conspicuous sinus, while the more distal portion of the palm is crenulated, and bears two setæ and at the end a spine of considerable size; the finger is slender and very long, considerably longer than the palm, with two spinules on the inner edge.

The female types described by Stebbing were found in the sands at Lee and Woolacombe, North Devon. We have dredged females in shallow water at Exmouth, Dartmouth, and several spots in the neighbourhood of Plymouth (Jellycliff and Whitsand Bays, &c.); a male was procured at Exmouth, and a second at Ilfracombe.

PARATANAIS BATEI, G. O. Sars.

1858. *Tanais Savignii*, Gosse, Manual Marine Zoology, vol. i. p. 137 (not *T. Savignii*, Kröyer).

1866. *Paratanaïs forcipatus*, Bate & Westwood, vol. ii. p. 138 (not *Tanais forcipatus*, Lilljeborg).

1886. *Paratanaïs Batei*, G. O. Sars, "Middelhavets Saxipoder," p. 338, pl. xiv. figs. 1-3.

1896. *Paratanaïs Batei*, G. O. Sars, Crust. Norway, Isopoda, p. 16, pl. vii.

Falmouth Harbour, 1884; Jellycliff Bay and other parts of Plymouth Sound, 1903 (*A. M. N.*).

LEPTOGNATHIA BREVIREMIS (Lilljeborg).

1896. *Leptognathia breviremis*, G. O. Sars, Crust. Norway, Isopoda, p. 28, pl. xiii. fig. 1.

Plymouth, 1889 (*A. M. N.*).

TANAOPSIS LATICAUDATA, G. O. Sars.

1886. *Tanaopsis laticaudata*, G. O. Sars, "Middelhavets Saxipoder, p. 353, pl. xv. figs. 14-17.

1896. *Tanaopsis laticaudata*, G. O. Sars, Crust. Norway, Isopoda, pl. 32, pl. xiv. fig. 1.

Plymouth Sound, 1903 ; Exmouth, 1904 (*A. M. N.*).

Tribe II. FLABELLIFERA, G. O. Sars.

Fam. 1. ANTHURIDÆ.

ANTHURA GRACILIS (Montagu).

1866. *Anthura gracilis*, Bate & Westwood, vol. ii. p. 160.

1886. *Anthura gracilis*, Norman & Stebbing, "Crust. Isopoda of 'Lightning,' 'Porcupine,' and 'Valorous' Expeditions," Trans. Zool. Soc. vol. xii. p. 122, pl. xxv. figs. 3, 4.

Devon (*Montagu*) ; Thatcher Rock, Torbay (*Walker*, fide *Bate*) ; Torquay (*Stebbing*) ; Ilfracombe and Plymouth (*A. M. N.*) ; Salcombe (*Todd*).

"On June 13 I found a male *Anthura gracilis*, 4 mm. long., provided with an antennal flagellum of nine joints, each of which was encircled by a dense ring of long slender hairs. Another specimen, dredged on September 16th, was 5 mm. long ; the antennæ were as long as the head and first two segments of the pereion, and each of the twelve joints of the flagella was encircled by hairs, as in the preceding specimen. The discovery of these specimens confirms in an interesting manner the prediction of Norman and Stebbing concerning the secondary sexual characters of the adult male of this species (Trans. Zool. Soc. xii. p. 123)" (*Garstang*, ii. p. 337).

Fam. 2. GNATHIIDÆ.

GNATHIA MAXILLARIS (Montagu). (Pl. II. figs. 1-8.)

1866. *Anceus maxillaris*, Bate & Westwood, vol. ii. p. 187.

It is not improbable that more than one of the *Ancei* named by Hesse are referable to this species.

The frontal margin (fig. 5) is furnished with three projections, of which the central is widest, flattened and somewhat concave distally. The mesosome may be said to consist of six segments, since behind the cephalosome there exists a narrow fillet which indicates the first of these segments ; the fourth segment is elevated into hump-like processes at the sides over the base of the legs ; the last two segments are

perfectly smooth. The metasome is rather short, and usually carried bent under the last segment of the mesosome; the pleopods (fig. 7) are quite devoid of all swimming-setæ. The upper antennæ (fig. 1) have the five-jointed flagellum shorter than the last joint of the peduncle. In the lower antennæ, the last two joints of the peduncle widen at their extremities, and the seven-jointed flagellum is shorter than the preceding joint. The mandibles (fig. 2) suddenly swell out on the inner side near the base; on the outer side is a shoulder and distinct notch, the extremity is bent slightly inwards, the inner margin is crenulated, crenulations 10-12; the greatest breadth of the mandible is situated below the notch of the outer margin. The second feet have the propodos bearing two spines, the distal one situated close to the base of the finger; the carpus and wrist bear two or three nodules. The sides of the telson (fig. 6) gradually converge to the extremity.

The female is accurately represented by Bate and Westwood (vol. ii. p. 192); the five segments of the mesosome are all distinct; the head is much wider than long, the front margin broad and straight (fig. 8); the total length of the body is not more than double that of the unusual breadth.

Length of male 5 mm., breadth 1.75 mm.

This is a common species on the coasts of Devon and Cornwall, and must clearly have been the species which Montagu found and described as *Cancer maxillaris*.

GNATHIA OXYURÆA (Lilljeborg). (Pl. II. figs. 9, 10; Pl. III. figs. 1-5).

1855. *Anceus oxyuræus*, Lilljeborg, "Om Hafs Crustaceer vid Kullaberg i Skåne," Öfvers. K. Vet.-Akad. Förhandl. 1855, p. 133, ♂.

1855. *Praniza cæruleata*, id. ibid. p. 132, ♀.

1866. *Anceus Edwardii*, Bate & Westwood, vol. ii. p. 201, ♀.

1897. *Gnathia maxillaris*, G. O. Sars, Crust. Norway, vol. ii. Isopoda, p. 52, pls. xxi., xxii. fig. 1.

This is the *Gnathia* which Sars in his earlier papers called *Anceus oxyuræus*, Lilljeborg.

Front margin of cephalosome with three nodular projections, the central larger than the lateral, rounded distally (not flattened as in the last species); hinder segments of mesosome with smooth surface; metasome fully equal in length to last two segments of mesosome, carried outstretched; telson with sides gradually and evenly converging to the end. Mandible sub lanceolate (fig. 9), broadest in the middle, where on the inner side the rounded sweep is at its maximum, beyond

which the outer margin is rather suddenly contracted by a shoulder but without any notch; extremity directed forwards, inner margin minutely crenulated, crenulations sometimes so obscure as scarcely to be visible. The second feet are nearly as in *G. maxillaris*; the propodos similarly bears two small spines, and the three preceding joints have nodules, which are rather more developed than in *G. maxillaris*. The pleopods (fig. 2) terminate in plumose setæ and are thus adapted for swimming. Length 3.75 mm.

The female is much more elongated and less broad than in the former species, the length being about three times the greatest breadth (see the figures of Bate & Westwood and of Sars). The length of the cephalosome (fig. 5) considerably exceeds the breadth.

Near Starcross, in 5 fathoms, 1884 (*A. M. N.*).

Fam. 3. ÆGIDÆ.

ÆGA STRÖMII, Lütken. (Pl. VIII. figs. 9, 10.)

1897. *Æga Strömii*, G. O. Sars, Crust. Norway, Isopoda, p. 60, pl. xxv. fig. 2.

The *Æga bicarinata* of Leach and of Bate and Westwood, and the figure given by the latter authors, which was taken from Leach's type from an unknown locality, are the *Æga rosacea* of Risso. That species is well known in the Mediterranean. The British specimens, so far as they are known to us, are referable to another species, which has much larger eyes, viz. *Æga Strömii* of Lütken (= *Æga monophthalma* var., Johnston = *Æga bicarinata*, Rathke). It is probable that the *Æga* obtained by Spence Bate "by trawling in Plymouth Harbour at the beginning of February" (*Bate & Westwood*, vol. ii. p. 280) was not *Æga bicarinata* of Leach, but *Æga Strömii*, Lütken. We figure the head and telson of the latter species; and for further notes on the subject, Norman, "Brit. Isopoda of the Families Ægidæ, Cirolanidæ, Idoteidæ, and Arcturidæ," *Ann. & Mag. Nat. Hist.* ser. 7, vol. xiv. 1904, p. 433, may be consulted.

ROCINELA DANMONIENSIS, Leach. (Pl. III. figs. 6-8.)

1867. *Rocinela danmoniensis*, Bate & Westwood, vol. ii. p. 291.

1897. *Rocinela danmoniensis*, G. O. Sars, Crust. Norway, Isopoda, p. 65, pl. xxvii.

It is *Acherusia rotundicauda*, Lilljeborg, and *Æga nasuta*, Norman. The cephalosome is subtriangular; the eyes very large and almost touching each other on the centre of the

cephalosome; the anterior portion in front of the eyes is smooth, with a narrowly rounded projecting rostrum, beneath which lie concealed the first joints of the antennules (see fig. 6).

Plymouth (*Leach and Biol. Lab.*); Polperro (*Laughrin, fide Bate*).

ROCINELA DUMERILII (Lucas). (Pl. III. figs. 9, 10.)

1845. *Acherusia Dumerilii*, Lucas, Anim. artic. d'Algérie, Crustacés, p. 79, pl. viii. fig. 5.

1879. *Rocinela Dumerilii*, Schiödte & Meinert, "Symbolæ ad Monog. Cymothoarum Crust. Isop. Fam.: I. Ægidæ," Naturhist. Tidssk. ser. 3, vol. xii. p. 391, pl. xii. figs. 4-9.

1904. *Rocinela Dumerilii*, Norman, "British Isopoda of the Families Ægidæ, Cirolanidæ, Idoteidæ, and Arcturidæ," Ann. & Mag. Nat. Hist. ser. 7, vol. xiv. p. 436.

Near the Eddystone Lighthouse (Plymouth Biol. Lab. 1899). The specimen which came under our observation was an adult male. The eyes are further apart than in the last species, and the central area of the cephalon between the eyes is raised considerably above their level, and is bounded on each side by a rib which in one part forms a nodule; in front the rostrum projects forwards and is bent upwards, while to the right and left of the rostrum are similar but rather smaller, suberect processes, the front being thus as described by Schiödte and Meinert:—"Frons media excavata, bicarinata, ante tridens, dente medio magno producto." The figures here given of dorsal and lateral views will show the form assumed; but in younger specimens the cephalosome is devoid of these processes, and closely resembles that of *R. danmoniensis*.

Fam. 4. ANILOCRIDÆ.

NEROCILA NEAPOLITANA, Schiödte & Meinert.

1881. *Nerocila neapolitana*, Schiödte & Meinert, "Symbolæ ad Monog. Cymothoarum," Naturhist. Tidsskr. ser. 3, vol. xiii. p. 41, pl. ii. (Cym. ix.) figs. 9-16.

Two or three years ago a specimen of this species was sent to us for determination by the Director of the Marine Biological Association at Plymouth. It had been taken five or six miles south of the Mewstone. This is the first occurrence of the genus in our seas.

Fam. 5. CIROLANIDÆ.*

Mouth-organs not formed for suction, but for biting and masticating. All the peræopods constructed for walking, sometimes also densely furnished with plumose setæ for swimming; fingers of three anterior pairs not hook-formed, bearing one or more small setæ, and terminating in a nail which is shorter than the finger. Second pleopods of the male with a stylet on the inner side.

Genus 1. CIROLANA, Leach.

Peduncles of antennæ (lower antennæ) five-jointed. Second joint of maxillipeds furnished with clasping spines. First pleopods not unlike the second, their inner branch submembranous. Basal joint of uropods much produced downwards on the inner side.

CIROLANA BOREALIS, Lilljeborg. (Pl. IV. fig. 1.)

1851. *Cirolana borealis*, Lilljeborg, "Norges Crustaceer," Æfvers. K. Vet.-Akad. Handl. p. 23.

1867. *Cirolana spinipes*, Bate & Westwood, vol. ii. p. 299.

1890. *Cirolana borealis*, H. J. Hansen, *Cirolanidæ et Familiæ nonnullæ propinquæ Musei Hauniensis*, p. 321, pl. i. figs. 1-10.

1897. *Cirolana borealis*, G. O. Sars, l. c. p. 70, pl. xxix.

Epimera (coxal plates) smooth. Peræopods not only very spinous, but also furnished with numerous swimming-setæ; the two upper joints of the last pair expanded and densely beset with long swimming-setæ. Telson well rounded at the extremity, and there furnished with 6-8 spinules; uropods rather narrow, the inner scarcely wider than the outer.

Off Devon coast (*A. M. N.*).

CIROLANA CRANCHII, Leach. (Pl. IV. fig. 2.)

1867. *Cirolana Cranchii*, Bate & Westwood, vol. ii. p. 296.

1890. *Cirolana Cranchii*, H. J. Hansen, l. c. p. 341, pl. iii. figs. 3-37.

Epimera with a diagonal riblet. Peræopods very spinous, but entirely devoid of swimming-setæ; the two upper joints of last pair not expanded, and quite free from swimming-setæ. Telson narrowly rounded at the extremity, and bearing ten spinules; uropods with inner corner of basal joint produced downwards fully to half the length of the branches, inner branch much wider than the outer; the distal half of

* Characters of the genera and species of this family are given, and are chiefly founded on the admirable work of H. J. Hansen.

the telson, as well as the uropods, densely beset with plumose setæ; margins of uropods with more numerous spinules than are present in *C. borealis*. *C. borealis* has the peræopods very setose, but in *C. Cranchii* these setæ are absent; perhaps this deficiency may in some degree be made up by the densely setose margins of the telson and uropods.

A species confined to our southern coasts, and much more abundant off Devon and Cornwall than *C. borealis*, which appears to be rare there.

Falmouth (*Leach*, type specimen from Cranch); Torquay (*Stebbing*); Plymouth (*Bate* & *A. M. N.*); Polperro (*A. M. N.*).

Genus 2. CONILERA, Leach.

Body much elongated; length about five times that of the greatest breadth. In general structure as *Cirolana*, but first pleopods much larger than the second, the basal joint and inner branch elongated, and the whole indurated (*i. e.*, not submembranous), and forming as it were an operculum, which closes, as a guard, over the succeeding pairs.

CONILERA CYLINDRACEA (Montagu).

1867. *Conilera cylindracea*, Bate & Westwood, vol. ii. p. 304.

1890. *Conilera cylindracea*, H. J. Hansen, l. c. p. 358, pl. iv. figs. 5-5 c, and pl. v. figs. 1-4 d.

1904. *Conilera cylindracea*, Norman, "British Isopoda of the Families Ægidæ, &c." Ann. & Mag. Nat. Hist. ser. 7, vol. xiv. p. 438.

The telson tapers to a narrow extremity, and is there serrated. The uropods have the inner branch with the distal half of the outer margin hollowed, so that the extremity is very narrow; the outer branch is unusually small, narrow, and much shorter than the inner.

Devon (*Montagu*); Plymouth and Polperro (*A. M. N.*).

Genus 3. EURYDICE, Leach.

Antennulæ with the first joint short and projected forward, so that it is at right angles to the following joints. Antennæ with the peduncle consisting of only four joints, the last of which is long. Maxillipeds without clasping spines on the second joint. First pleopods submembranaceous. Basal joint of uropods scarcely produced downwards on the inner side.

The species of this genus may be distinguished, apart from other characters, by the structure of the telson, of which

we give illustrations. In a fifth British species, *Eurydice Grimaldii*, Dollfus = *E. elegantula*, Hansen, the telson has a broadly truncate extremity, which is straight, minutely serrated, and furnished with plumose setæ, while each angle is produced to a single spine-point which is larger than the serrations.

EURYDICE PULCHRA, Leach. (Pl. III. fig. 11.)

1867. *Eurydice pulchra*, Bate & Westwood, vol. ii. p. 310.

1890. *Eurydice pulchra*, H. J. Hansen, l. c. p. 370, pl. vi. figs. 3-3 i.

1897. *Eurydice pulchra*, G. O. Sars, l. c. p. 73, pl. xxx. fig. 2.

Telson widely rounded at the extremity, where it is very minutely serrulated, a seta in the hollow of each of the 12-18 serrulations, and two pairs of small spines; the outermost spine of each side has one or two setæ exterior to it, then 2-3 setæ, then the second spine.

Bantham, Devon (*Leach*); Paignton (*Stebbing*).

EURYDICE TRUNCATA (Norman). (Pl. III. fig. 14.)

1868. *Cirolana truncata*, Norman, "Two Isopods belonging to Genera *Cirolana* and *Anilocra* new to British Islands," Ann. & Mag. Nat. Hist. ser. 4, vol. ii. p. 421, pl. xxiii. figs. 12-15.

1895. *Eurydice truncata*, H. J. Hansen, Isopoden, Cumaceen, und Stomatopoden der Plankton-Exped. p. 13, pl. i. figs. 5-5 h.

1904. *Eurydice truncata*, Norman, "Brit. Isop. Fams. Ægidæ, Cirolanidæ, Idoteidæ, and Arcturidæ," Ann. & Mag. Nat. Hist. ser. 7, vol. xiv. p. 439.

Telson with the extremity truncate and serrulated, having at the angles two larger sized serrations (not spines) of which the outer is smaller than the inner; the central portion of the truncation with a few setæ (about eight) situated in the hollows of the serrulations; the sides of the telson towards the extremity are also very minutely serrulated.

Dr. Gough, of the Biological Laboratory, Plymouth, sent to A. M. N., in 1904, specimens of this species taken off Prawle Point, Devon.

EURYDICE SPINIGERA, H. J. Hansen. (Pl. III. fig. 12.)

1890. *Eurydice spinigera*, H. J. Hansen, l. c. p. 367, pl. v. figs. 4-4 c; pl. vi. figs. 1-1 c.

1904. *Eurydice spinigera*, Norman, l. c. p. 440.

Telson contracted toward the truncated extremity, which is less than half the greatest breadth; at each angle of the truncation are two articulated spines, of which the inner is markedly the larger; the central portion between the inner-

most spines is emarginate, and furnished with numerous, long, plumose setæ.

Dredged in Whitsand Bay, Plymouth, in 1903 (*A. M. N.*); Ilfracombe (*Stebbing*); St. Ives, 1905 (*Vallentin*!).

EURYDICE INERMIS, H. J. Hansen. (Pl. III. figs. 13 & 13*.)

1890. *Eurydice inermis*, H. J. Hansen, l. c. p. 366, pl. v. figs. 3-3*f*.

1904. *Eurydice inermis*, Norman, l. c. p. 440.

Telson with the extremity truncated, the truncated portion measures less than one-third of greatest breadth of telson, finely serrulated, without spines or markedly larger serrations at the corners, wholly devoid of plumose setæ, and only bearing minute cilia together with scattered cilia of the same character on the microscopically serrulated sides of the telson. This differs also from the three former species in the small size of the uropods (see figure 13) which fall considerably short of the telson in length; while in the other species they are of about the same length as the telson.

Dredged while staying at the Marine Laboratory, Plymouth, in 1903, in the neighbourhood of the Eddystone Lighthouse. The type specimens in the Copenhagen Museum, described by Hansen, were procured from plankton taken off the Lizard.

Fam. 6. LIMNORIIDÆ.

LIMNORIA LIGNORUM (Rathke).

1867. *Limnoria lignorum*, Bate & Westwood, vol. ii. p. 351.

1897. *Limnoria lignorum*, G. O. Sars, l. c. p. 76, pl. xxxi.

Torquay (*Stebbing*); Falmouth Docks (*Cocks* & *A. M. N.*). Doubtless common all along the coast.

Fam. 7. SPHÆROMIDÆ.

SPHÆROMA SERRATUM, Leach.

Mouth of the Tamar, the types (*Leach*); Plymouth, Exmouth Estuary (*A. M. N.*).

SPHÆROMA RUGICAUDA, Leach.

Plymstock, near Plymouth (*A. M. N.*); Torquay (*Stebbing*).

CYMODOCE TRUNCATA (Montagu), Leach. (Pl. IV. figs. 3-14.)

1868. *Cymodocea truncata* (Montagu), B. & W. vol. ii. p. 426, ♂.1868. *Cymodocea emarginata* (Leach), B. & W. vol. ii. p. 428, ♂.1868. *Spharoma curtum* (Leach), B. & W. vol. ii. p. 412, ♀.1868. *Spharoma Prideauxianum*, Leach, B. & W. vol. ii. p. 415, ♀.

We have examined the types of the four above so-called species in the British Museum, and are satisfied that they all belong to the two sexes of one species. As long ago as 1884 we took the two sexes *in coitû* at Falmouth. The type specimen of *C. emarginata* differs from that of *C. truncata* in having the segments of the metasome covered with somewhat larger granulations than usual; but selecting a somewhat similar specimen from among *C. truncata*, and then rubbing off all setæ, *C. emarginata* was imitated (fig. 4). But B. & W.'s fig. "p," on page 428, does not correctly represent the central process of the last segment as seen from below, for it is nearly parallel-sided, and not ovate as drawn. There is considerable variation in the development of the tubercles on the metastome of the female, which are now well elevated and nearly round; now much less conspicuous and more elongated; now almost obsolete.

In the British Museum, among many examples of the species procured by the late Mr. McAndrew at Shetland, are two small specimens which differ from all others which we have seen. They are only 5.5 mm. long. The last segment of the metasome, or telson (fig. 6), has two greatly elevated ridges which slightly converge behind, and show a faintly indicated longitudinal hollow. These ridges are much more developed in proportion to the size of the entire animal than we have seen in any female specimens, and they possibly represent the young stage of the male.

The mouth-organs of the female present two entirely different types. In the largest specimens examined they are as figs. 7, 8, 9, 10, and resemble the same parts in the male of *Cymodoce*, but differ from those of the genus *Spharoma* in several particulars, but chiefly in the forms of the mandibles and maxillipeds; these large specimens did not contain any embryos. The second form of the mouth-organs was found in examples which in size were rather more than half-grown. In these specimens the whole of the interior of the body was crammed with embryos, which filled every part, even the mouth itself, so that it seemed impossible that the animal could swallow any solid substance. Here the mouth-organs were very greatly modified, so as to assume a much more rudimentary character. A comparison of figs. 11, 12, 13, 14 with figs. 7-10 will show that in the mandibles the masticatory

portion is absent, and that in the two pairs of maxillæ and in the maxillipeds the lobes are greatly reduced in size ; but, on the other hand, it will be noticed that the outer member of the first maxillæ, and the basal joints of the second maxillæ, and especially the same joint in the maxilliped, are considerably expanded in width. Thus it would appear that the entire mouth-organs have assumed a structure which should at first supply a cap to hold in the embryos, and subsequently, when the cap is thrown open, to allow the young to escape ; there is an absence of all spines and setæ which might interfere with their outward passage.*

Cymodoce truncata is found along the coasts of Devon and Cornwall ; it is to be met with all the way up the western side of Great Britain, having been taken by A. M. N. in the Minch (1866) and at Shetland (1863) ; we have received it also from St. Andrews (*McIntosh*) ; southwards it has been taken by A. M. N. at Naples. It would seem also to be the *Sphæroma granulatum* of H. M.-Edwards, and *S. rubropunctatum*, Grube ; under which names we have received Adriatic specimens from Professor Heller (Heller, Carcinol. Beitr. zur Fauna des adriat. Meeres, 1866, p. 25).

DYNAMENE MONTAGUI, Leach.

Mr. Stebbing has suggested that this may be the immature state of *Næsa bidentata*, ♂. This may prove to be the case.

Devon (*Leach*) ; Torquay (*Stebbing*).

NÆSA BIDENTATA (Adams).

1868. *Næsa bidentata*, B. & W. vol. ii. p. 431, ♂.

1868. *Dynamene rubra* (Montagu), B. & W. vol. ii. p. 419, ♀.

1868. *Dynamene viridis* (Leach), B. & W. vol. ii. p. 421, ♀.

Dartmouth, Plymouth, Polperro, Falmouth (A. M. N.) ; Torquay (*Stebbing*).

CAMPECOPEA HIRSUTA (Montagu).

1868. *Campecopea hirsuta*, B. & W. vol. ii. p. 434, ♂.

1868. *Campecopea Cranchii* (Leach), B. & W. vol. ii. p. 436, ♀.

Devon (*Montagu*) ; Falmouth and Polperro (*Bate*) ; Falmouth (A. M. N.) ; Torquay, in all localities where *Lichina pygmaea* is to be found (*Stebbing*) ; Plymouth (*Biol. Lab.*).

* While this was in the printers' hands we learnt that Hansen had sent a paper for publication to the Quart. Journ. Micros. Sci. on the Family Sphæromidæ, in which he arrives independently at conclusions for the most part similar to our own. From subsequent correspondence with him we find that he holds different, and perhaps more correct, views as to the mode of escape of the young.

Tribe III. VALVIFERA, G. O. Sars.

Fam. 1. IDOTEIDÆ.

In this family reference will be made to Dollfus (A.), "Les Idoteidæ des Côtes de France," Feuille des Jeunes Naturalistes, Feb. 1895; and in this and the next family, Arcturidæ, to Norman (A. M.), "British Isopoda of the Families Ægidæ, Cirolanidæ, Idoteidæ, and Arcturidæ," Ann. & Mag. Nat. Hist. ser. 7, vol. xiv. 1904.

IDOTEA BALTHICA (Pallas).

Synonyms are: *I. tricuspidata*, Bate & Westwood, and *I. irrorata*, Say.

Abundant on the coasts.

IDOTEA NEGLECTA, G. O. Sars.

1895. *Idotea marina*, A. Dollfus, l. c. p. 7, fig. 22.

1897. *Idothea neglecta*, G. O. Sars, l. c. p. 84, pl. xxxv. fig. 1.

1904. *Idotea neglecta*, Norman, l. c. p. 442.

No doubt all along the coasts. Falmouth and Plymouth (A. M. N.). In the latter locality sometimes found in the greatest profusion.

IDOTEA PELAGICA, Leach.

1895. *Idotea pelagica*, A. Dollfus, l. c. p. 8, fig. 23.

1897. *Idothea pelagica*, G. O. Sars, l. c. p. 81, pl. xxxiii.

Spence Bate states that he had received this species from the Eddystone Lighthouse.

IDOTEA EMARGINATA (Fabricius).

1867. *Idotea emarginata*, A. Dollfus, l. c. p. 6, figs. 17, 18.

1897. *Idothea emarginata*, G. O. Sars, l. c. p. 85, pl. xxxv. fig. 2.

Falmouth (*Cocks*); Plymouth, at times very abundant (A. M. N.).

IDOTEA LINEARIS (Pennant).

1846. *Idothea sexlineata*, Krøyer, Naturhist. Tidssk. ser. 2, vol. ii. p. 88; Voyages en Scand. &c. pl. xxvi. fig. 1.

1867. *Idotea linearis*, Bate & Westwood, vol. ii. p. 388.

1895. *Idotea linearis*, A. Dollfus, l. c. p. 6, fig. 16.

Exmouth, Plymouth, Falmouth (A. M. N.); Torquay (*Bate*).

ZENOBIANA PRISMATICA (Risso).

1826. *Zenobia prismatica*, Risso, Hist. Nat. de l'Europe Mérid. vol. v. p. 110, pl. v. fig. 24.
 —? *Idotea chelipes*, O. G. Costa, Fauna del regno di Napoli, *Idotea*, p. 2, pl. xi. figs. 2, *a*, *b*, *c*.
 1867. *Idotea parallela*, Bate & Westwood, l. c. vol. ii. p. 391.
 1895. *Zenobia prismatica*, A. Dollfus, l. c. p. 9, fig. 25.
 1895. *Zenobiana prismatica*, Stebbing, "Notes on Crustacea," Ann. & Mag. Nat. Hist. ser. 6, vol. xv. p. 24.
 1904. *Zenobiana prismatica*, Norman, l. c. p. 444.

Meadfoot, Torquay (*Stebbing*, in *Mus. Nor.*); Paignton (*Stebbing*); Cawsand Bay, Plymouth (*Garstang*, ii. p. 338); Polperro (*Laughrin*, fide *Bate*); Falmouth (*A. M. N.*).

STENOSOMA LANCIFERUM, Leach (MSS.).

1867. *Idotea appendiculata*, Bate & Westwood, vol. ii. p. 396 (nec *Leptosoma appendiculatum*, Risso).
 1895. *Stenosoma lancifer*, A. Dollfus, l. c. p. 5, fig. 14.
 1904. *Stenosoma lanciferum*, Norman, l. c. p. 444.

Ilfracombe (*Stebbing*); Sidmouth (*Leach*); Exmouth, tide-marks (*A. M. N.*); Polperro (*Laughrin*, in *Mus. Nor.*).

STENOSOMA ACUMINATUM, Leach.

1867. *Idotea acuminata*, Bate & Westwood, vol. ii. p. 394.
 1895. *Stenosoma acuminatum*, A. Dollfus, l. c. p. 5, fig. 14.
 1904. *Stenosoma acuminatum*, Norman, l. c. p. 444.

Devonshire (*Leach*); Falmouth (*Cocks*).

Fam. 2. ARCTURIDÆ.

ASTACILLA LONGICORNIS (Sowerby).

1867. *Arcturus longicornis*, Bate & Westwood, vol. ii. p. 365, ♀.
 1867. *Arcturus gracilis* (Goodsir), iid. ibid. p. 373, ♂.
 1897. *Astacilla longicornis*, G. O. Sars, l. c. p. 88, pl. xxxvi.

Mouth of the Yealm (*A. M. N.*); Plymouth (*Bate*).

ASTACILLA DESHAYESII (Lucas). (Pl. V. figs. 6–10.)

1845. *Arcturus Deshayesii*, Lucas, Anim. artic. de l'Algérie, Crust. p. 59, pl. v. fig. 7.
 1874. *Arcturus gracilis*, Stebbing (nec Goodsir), "Sessile-Eyed Crustacea of Devon," Trans. Devon. Assoc. Advanc. Science, p. 8, figs. 2–4 (separate copy).
 1878. *Arcturus linearis*, Stebbing, "Notes on Sessile-Eyed Crustacea," Ann. & Mag. Nat. Hist. ser. 5, vol. i. p. 36.
 1893. *Astacilla Deshayesii*, Stebbing, History of Crustacea, p. 371 (name only).
 1904. *Astacilla Deshayesii*, Norman, l. c. p. 447.

Salcombe (*Stebbing, co-types in Mus. Nor.*); inside Drake Island, Plymouth, 1889 (*A. M. N.*).

[*Astacilla intermedia* (Goodsir) is recorded by Mr. Todd, vi. p. 178, from between Snake Point and the Saltstone, Salcombe; but as *A. Deshayesii*, a near ally, occurs at Salcombe, it was not unlikely that the latter was the species found.]

ARCTURELLA DAMNONIENSIS (*Stebbing*). (Pl. V. figs. 1-5.)

1874. *Arcturus damnoniensis*, Stebbing, "A new Species of *Arcturus*," Ann. & Mag. Nat. Hist. ser. 4, vol. xiii. p. 291, pl. xv.
1904. *Arcturella damnoniensis*, Norman, l. c. p. 447.

Torbay (*Stebbing, co-types in Mus. Nor.*); Ilfracombe, Starcross, and Plymouth (*A. M. N.*); Kingsbridge Estuary (*Todd*, vi. p. 178).

Tribe IV. ASELLOTA, G. O. Sars.

Fam. 1. ASELLIDÆ.

ASELLUS AQUATICUS (Linné).

Common in ponds, rivers, and canals.

Fam. 2. JANIRIDÆ.

JANIRA MACULOSA, Leach.

Devon (*Montagu*); Ilfracombe (*A. M. N.*); Polperro (*Couch*).

JÆRA MARINA (Fabricius).

1867. *Jæra albifrons* (Montagu), Bate & Westwood, vol. ii. p. 317.
1897. *Jæra marina*, G. O. Sars, l. c. p. 104, pl. xliii.

Common under stones between tide-marks. Sars gives as synonyms *J. Krøyeri*, Zaddach; *J. baltica*, Fr. Müller; *J. copiosa*, Stimpson; and *J. nivalis*, Krøyer.

JÆRA NORDMANNI (Rathke).

1867. *Jæra Nordmanni*, Bate & Westwood, vol. ii. p. 320.

Recorded by Bate from Plymouth. Professor Sars writes:—"It seems to me somewhat doubtful whether the form figured by Spence Bate and Westwood under this name is the true

Rathkian species; or perhaps more properly the male of *J. marina*." On the other hand, Stebbing ("On some Species of Sessile-Eyed Crustaceans," Ann. & Mag. Nat. Hist. ser. 4, vol. xvii. 1876, p. 79, pl. v. fig. 7) found both *J. albifrons* and *J. Nordmanni* at Meadfoot, Torquay, and considers them to be distinct; and Sars ("On some Additional Crustacea from the Caspian Sea," Annuaire du Mus. Zool. Acad. Imp. des Sci. St. Pétersbourg, 1897, p. 300, pl. xvi. figs. 2-6), after describing *J. Nordmanni* from the Caspian, gives:—"Distribution. South coast of England (Spence Bate); coast of France (Bonnier); Mediterranean, Black Sea (Rathke)." Now, although the Caspian paper bears the same date as the passage we have quoted from 'The Crustacea of Norway,' we are disposed to think that the former was the later publication and embraces the writer's more mature views, after he had examined the Caspian specimens. We hesitate to express an opinion of our own, as we have not seen specimens; but the form of the cephalon and especially of the uropods, as figured by Sars, show marked differences from the illustrations of Bate and Westwood of the same parts.

Fam. 3. MUNNIDÆ.

MUNNA KRÖYERI, Goodsir.

1867. *Munna Krøyeri*, Bate & Westwood, vol. ii. p. 326, ♂.

1867. *Munna Whiteana*, Bate & Westwood, vol. ii. p. 329, ♀.

1897. *Munna Krøyeri*, G. O. Sars, p. 109, pl. xlv. fig. 1.

Anstey's Cove, Torquay (*Stebbing*); Salcombe (*Todd*, vi. p. 204).

MUNNA LIMICOLA, G. O. Sars.

1866. *Munna limicola*, G. O. Sars, Beretning om en i Sommeren

1865 foretagen zoologisk Reise ved Kysterne af Christianias og Christiansands Stifter, p. 29.

1897. *Munna limicola*, G. O. Sars, p. 108, pl. xlv. fig. 1.

Near Duke Buoy, Plymouth, 1889 and 1903 (*A. M. N.*).

MUNNA FABRICII, Krøyer.

1897. *Munna Fabricii*, G. O. Sars, p. 108, pl. xlv. fig. 2.

Ilfracombe, 1904 (*A. M. N.*).

Tribe V. ONISCOIDA.

Fam. 1. LIGIIDÆ.

LIGIA OCEANICA, Linné.

Common on rocky shores at and above high-water mark.

Fam. 2. TRICHONISCIDÆ.

TRICHONISCUS PUSILLUS, Brandt.

1868. *Philourgria riparia*, Bate & Westwood, vol. ii. p. 456.

1897. *Trichoniscus pusillus*, G. O. Sars, p. 161, pl. lxxii. fig. 1.

Plymouth; Polperro in the gardens of the Inn, not uncommon; Looe, abundantly among sticks by the river-side (*Bate*); St. Ives (*A. M. N.*).

TRICHONISCUS ROSEUS (Koch).

1868. *Philourgria rosea*, Bate & Westwood, vol. ii. p. 460.

1897. *Trichoniscus roseus*, G. O. Sars, p. 163, pl. lxxiii. fig. 1.

Tolerably abundant in the courtyard and cellar of Mr. Spence Bate's house at Plymouth, and in those of neighbouring houses. Torquay (*A. M. N.*).

Fam. 3. ONISCIDÆ.

ONISCUS ASELLUS, Linné.

Common everywhere.

PHILOSCIA COUCHII, Kinahan.

1868. *Philoscia Couchii*, Bate & Westwood, vol. ii. p. 452.

1885. *Philoscia longicornis*, Budde-Lund, Crust. Isop. terrestria, p. 224.

1897. *Philoscia Couchii*, A. Dollfus, "Tableau iconographique des *Philoscia* d'Europe," Feuille des Jeunes Naturalistes, xxviii^e Année, p. 5 (separate copy), pl. i. figs. 1-1 c.

First discovered at Talland Cove, near Polperro (*Kinahan*). It is now known to have an extended range on the south-west coast of Europe and throughout the shores of the Mediterranean, Azores, and Canaries.

PHILOSCIA MUSCORUM (Scopoli).

1897. *Philoscia muscorum*, A. Dollfus, "Tab. icon. des *Philoscia* d'Europe," Feuille des Jeunes Naturalistes, p. 12 (separate copy).

1898. *Philoscia muscorum*, G. O. Sars, p. 173, pl. lxxvi. fig. 1.

Polperro, Cornwall (*Kinahan*).

PORCELLIO SCABER, Latreille.

Common everywhere.

PLATYARTHURUS HOFFMANNSEGGI, Brandt.

1898. *Platyarthrus Hoffmannseggii*, G. O. Sars, p. 175, pl. lxxvi. fig. 2.

Berry Head near Torquay, and Plymouth.

Fam. 4. ARMADILLIDIIDÆ.

ARMADILLIDIUM VULGARE (Latreille).

Abundant in the two counties.

Tribe VI. EPICARIDA, G. O. Sars.

Fam. 1. BOPYRIDÆ.

BOPYRUS SQUILLARUM, Latreille.

1867. *Bopyrus squillarum*, Bate & Westwood, vol. ii. p. 218.

1890. *Bopyrus Fougerouvi*, Giard & Bonnier, "Prod. d'une Monog. Epicarides du Golfe de Naples," Bull. Sci. de France et Belgique, vol. xxii. p. 369.

1897. *Bopyrus squillarum*, G. O. Sars, p. 197, pl. lxxxiv. fig. 1.

1900. *Bopyrus Fougerouvi*, Bonnier, "Contrib. à l'étude des Epicarides: Les Bopyridæ," p. 358, pls. xxxv., xxxvi., xxxvii. figs. 1-4.

Common on *Palaemon serratus*.

BOPYRINA GIARDI, Bonnier.

1900. *Bopyrina Giardi*, Bonnier, l. c. p. 365, pls. xxxviii., xxxix., & xl.

On *Hippolyte varians* at Ilfracombe (Stebbing, 'History of Crustacea,' 1893, p. 417).

BOPYROIDES HIPPOLYTES (Kröyer).

1867. *Gyge hippolytes*, Bate & Westwood, vol. ii. p. 230.

1897. *Gyge hippolytes*, G. O. Sars, p. 199, pl. lxxxiv. fig. 2.

Bonnier (l. c. p. 373) does not consider B. & W.'s species to be that of Kröyer, because he holds that each Epicarid has only one species as its host, a view which we consider cannot be maintained; as a parallel case we know that while some parasitic Copepods are restricted to one species of fish, there are others which attack several species.

Bate and Westwood received the specimen figured by them from Polperro, where it was taken by Laughrin; but the host is not given.

PSEUDIONE HYNDMANNI, Bate & Westwood.

1867. *Phryxus Hyndmanni*, Bate & Westwood, vol. ii. p. 243.

1897. *Pseudione Hyndmanni*, G. O. Sars, p. 202, pl. lxxxv. fig. 2.

1900. *Pseudione Hyndmanni*, Bonnier, l. c. p. 295, pl. xviii.

On young specimens of *Pagurus bernhardus* near Starcross (A. M. N.).

PLEUROCRYPTA GALATHEÆ, Hesse.

1865. *Pleurocrypta galatheæ*, Hesse, Ann. des Sci. Nat. ser. 5, vol. iii. p. 226, pl. iv. figs. 1-28.

1900. *Pleurocrypta galatheæ*, Bonnier, l. c. p. 310, pl. xiii.

This is not *Phryxus galatheæ* of Bate and Westwood, which has an entirely different metasome (pleon), the segments of which are separate. This was named by Norman, 'Museum Normanianum,' 1886, p. 13, No. 509, "*Gyge confusa*"; and is the *Pseudione confusa* of Bonnier.

Parasitic on *Galathea squamifera* at Starcross (C. Parker, in Mus. Nor.).

PLEUROCRYPTA LONGIBRANCHIATA (Bate & Westwood).

1867. *Phryxus longibranchiatus*, Bate & Westwood, vol. ii. p. 246.

1897. *Pleurocrypta longibranchiata*, G. O. Sars, p. 206, pl. lxxxvi. fig. 1.

Fine specimens of this species, so well figured by Sars, taken on *Galathea squamifera* near Starcross (A. M. N.).

ATHELGES PAGURI (Rathke).

1867. *Phryxus paguri*, Bate & Westwood, vol. ii. p. 240.

1867. *Phryxus fusticaudatus*, Bate & Westwood, vol. ii. p. 238 (junior).

1897. *Athelges paguri*, G. O. Sars, p. 210, pl. lxxxvii.

Not uncommon on young specimens of *Pagurus bernhardus* at Starcross (A. M. N.); Polperro (Couch, fide Bate).

IONE THORACICA (Montagu).

1867. *Ione thoracica*, Bate & Westwood, vol. ii. p. 255.

1900. *Ione thoracica*, Bonnier, l. c. p. 238, pls. i., ii., iii.

Taken and described by Montagu nearly one hundred years ago, and found by him in the Kingsbridge Estuary on *Callianassa subterranea*. We are not aware that it has since been found on the coasts of Great Britain, but it has been taken at Jersey.

Fam. 2. CRYPTONISCIDÆ.

CRYPTOTHIR BALANI (Bate).

1867. *Cryptothiria balani*, Bate & Westwood, vol. ii. p. 267.

1897. *Cryptothir balani*, G. O. Sars, p. 236, pl. xcviii. fig. 2.

Starcross (A. M. N.); Plymouth (from *Biol. Lab. in Mus. Nor.*).

LIRIOPSIS PYGMÆA (Rathke).

1867. *Cryptothiria pygmæa*, Bate & Westwood, vol. ii. p. 261.

1897. *Liriopsis pygmæa*, G. O. Sars, p. 242, pl. xcix. fig. 3; pl. c. fig. 1.

Parasitic on *Pellogaster paguri*; the latter being attached to the abdomen of young specimens of *Pagurus bernhardus* taken near Starcross, and to that of *Pagurus cuanensis* dredged off Plymouth (A. M. N.).

Order VIII. AMPHIPODA.

In order to shorten references the following more important works will be quoted with only the date, author's name, volume, page and plate :—

1861-1868. BATE & WESTWOOD.—History of British Sessile-Eyed Crustacea, 2 vols.

1870. BOECK (AXEL).—Crustacea Amphipoda borealia et arctica. Vid.-Selsk. Forhand. pp. 80-280 (or pp. 1-200, separate copy).

1872 & 1876. BOECK (AXEL).—De Skandinaviske og Arktiske Amphipoder. Pt. i. pp. 1-160, 1872; Pt. ii. pp. 161-711, 1876.

1882. SARS (G. O.).—Oversigt af Norges Crustaceer med foreløbige Bemærkninger over de nye eller mindre bekjendte Arter. I. Podophthalmata, Cumacea, Isopoda, Amphipoda. Christ. Vid.-Selsk. Forhand. No. 18.

1890-1895. SARS (G. O.).—Account of the Crustacea of Norway. Vol. I. Amphipoda.

1893. DELLA VALLE (ANTONIO).—Gammarini del Golfo di Napoli. Fauna und Flora des Golfes von Neapel, 20 Monographie.

Tribe I. HYPERIIDEA.

Fam. 1. HYPERIIDÆ.

HYPERIA GALBA (Montagu).

1863. *Hyperia galba*, Bate & Westwood, vol. ii. p. 12, ♀.

1863. *Lestrigonus exulans* (Kröyer), *idem*, *ibid.* p. 5, ♂.

1863. *Lestrigonus Kinahani*, *idem*, *ibid.* p. 8, ♂.

1890. *Hyperia galba*, Sars, p. 7, pl. ii. & pl. iii. fig. 1.

It is also *Hyperia Latreillei*, H. Milne-Edwards, and *Hyperia medusarum*, Boeck (*nec* Müller).

Plymouth, abundant (*Bate*) ; Plymouth, 1889 (*A. M. N.*).

EUTHEMISTO GRACILIPES (Norman).

1863. *Hyperia obliqua*, Bate & Westwood, vol. ii. p. 16 (not *H. obliqua*, Kröyer).

1869. *Hyperia gracilipes*, Norman, "Last Report Dredging Shetland," Brit. Assoc. Rep. for 1868, p. 287.

1887. *Parathemisto longipes*, Bovallius, "Syst. List. of Amphip. Hyperideia," Bihang t. K. Sv. Vet.-Akad. Handl. vol. xi. no. 16, p. 21.

1889. *Parathemisto gracilipes*, Bovallius, "Contrib. to Monog. of Amphip. Hyperideia," K. Sv. Vet.-Akad. Handl. vol. xxii. no. 7, p. 368.

1900. *Parathemisto gracilipes*, Norman, "British Amphipoda of the Tribe Hyperideia, &c.," Ann. & Mag. Nat. Hist. ser. 7, vol. v. p. 131.

A Hyperid which Dr. Gough has taken in the tow-net off the coasts of Devon and Cornwall at all times of the year, which A. M. N. has also seen from the West of Scotland, is the form apparently figured by Bate, though his figure of the gnathopod is incorrect. We have been much puzzled as to whether it should be regarded as a small race of *Euthemisto compressa*, or as a distinct species. It nearly approaches this last-named species in the form of the carpus of the first two pairs of legs and other particulars. The obvious differences are the total absence of any sign of the dorsal spination characteristic of *Euthemisto compressa*, Goës (= *Lestrigonus spinidorsalis*, Bate), and its very small size (we have not seen any specimens that exceeded 6 mm. length), *i. e.* half the length which is usual in *E. compressa*, and Bate gives the length as one-fifth of an inch. Whether it is really a species or not, it is at least worthy of a varietal name as being a southern form of its northern brother. The differences between the genera *Parathemisto* and *Euthemisto* are very slight. *E. compressa* is a connecting link.

HYPEROCHE TAURIFORMIS (Bate & Westwood).

1838. *Metoeus medusarum*, Kröyer, Grönlands Amphipoder, p. 288, pl. iii. fig. 15.

1869. *Metoeus medusarum*, Norman, "Last Report Dredging Shetland," Brit. Assoc. Rep. for 1868, p. 287.

1869. *Hyperia tauriformis*, Bate & Westwood, vol. ii. p. 519.

1872. *Tauria medusarum* and *T. abyssorum*, Boeck, l. c. pp. 82 & 83, pl. i. fig. 2.

1889. *Hyperoche Kröyeri*, Bovallius, "Contrib. to Monograph of Amphipoda Hyperideia," p. 87; *Hyperoche abyssorum*, p. 94; *Hyperoche Lutkeni*, p. 97, pl. vii. figs. 1-26; and *Hyperoche tauriformis*, p. 115.

1890. *Hyperoche Krøyeri*, G. O. Sars, p. 9, pl. iv.

1900. *Hyperoche tauriformis*, Norman, "British Amphipoda of the Tribe Hyperiidea, &c.," Ann. & Mag. Nat. Hist. ser. 7, vol. v. p. 130.

Dr. Gough procured this species in his tow-net, November 1903. at Stat. 19 (Internat. Comm.), that is off the S.E. coast of Cornwall.

Tribe II. GAMMARIDEA.

Fam. 1. ORCHESTIIDÆ.

TALITRUS LOCUSTA (Pallas).

Common, sandy shores.

ORCHESTIA LITTOREA (Montagu).

1869. *Orchestia brevidigitata*, Bate & Westwood, vol. ii. p. 497 (young ♂).

Common, stony shores.

ORCHESTIA MEDITERRANEA, Costa.

1893. *Orchestia chilensis*, Della Valle, l. c. p. 498, pl. i. fig. 8, and pl. xv. figs. 31-38.

Topsham and Exmouth Warren (*Parfitt*).

ORCHESTOIDEA DESHAYESII (Audouin).

1861. *Orchestia Deshayesii*, Bate & Westwood, vol. i. p. 36.

1887. *Orchestia Deshayesii*, Th. Barrois, "Note sur quelques points de la Morphologie des Orchesties," Lille, p. 6, figs. 1-13.

1893. *Talorchestia Deshayesii*, Chevreux, Bull. Soc. Zool. France, vol. xviii. p. 127, fig. in text.

1899. *Talorchestia Deshayesii*, Stebbing, "Amphip. from Copenhagen Mus. and other sources, Pt. 2," Trans. Linn. Soc. ser. 2, Zool. vol. vii. p. 400, pl. xxx. A.

1900. *Orchestoidea Deshayesii*, Norman, "Brit. Amphip. of the Tribe Hyperiidea, &c.," Ann. & Mag. Nat. Hist. ser. 7, vol. v. p. 139.

Shores of North Devon (*Stebbing*) ; Mount Batten, Plymouth (*Bate*).

ORCHESTOIDEA BRITO (Stebbing).

1891. *Talorchestia brito*, Stebbing, "Sessile-Eyed Crustacea," Ann. & Mag. Nat. Hist. ser. 6, vol. viii. p. 327, pl. xv.

1900. *Orchestoidea brito*, Norman, "Brit. Amphip. of the Tribe Hyperiidea, &c.," Ann. & Mag. Nat. Hist. ser. 7, vol. v. p. 140.

Woolacombe and Saunton Sands, North Devon (*Stebbing*).

HYALE NILSSONI (Rathke).

It is *Allorchestes Nilssonii*, Bate & Westw.; *Orchestia nidrosiensis*, Kröyer; and *Amphithoë Prevostii*, Rathke.

Plymouth Sound (*Bate*); Torquay (*Stebbing*); Mewstone, Falmouth, Penzance (*A. M. N.*).

HYALE LUBBOCKIANA (Bate).

This is *Allorchestes imbricatus*, Bate, ♂; *Nicea Lubbockiana*, Bate, ♀. For notes on the species see Norman's paper quoted above, p. 138, and *Stebbing*, Ann. & Mag. Nat. Hist. ser. 4, vol. xvii. 1876, p. 337.

Penzance (*Barlee*); Falmouth (*W. Webster*); Breakwater at Plymouth (*Bate*); Torbay (*Stebbing*).

Fam. 2. LYSIANASSIDÆ.

LYSIANAX SEPTENTRIONALIS, Della Valle.

1861. *Lysianassa Costæ*, Bate & Westwood, vol. i. p. 74, ♀.

1861. ? *Lysianassa longicornis*, iid. ibid. p. 85, ♂ (partim).*

1872. *Lysianassa Costæ*, Boeck, p. 118, pl. iv. fig. 1, ♀.

1872. *Lysianassa plumosa*, Boeck, p. 116, pl. iii. fig. 5, ♂.

1890. *Lysianassa Costæ*, Sars, p. 42, pl. xvi. fig. 1.

1893. *Lysianax septentrionalis*, Della Valle, p. 788.

Plymouth Sound (*Bate*); Salcombe, Scilly Isles (*A. M. N.*).

LYSIANAX CERATINUS, A. O. Walker.

1889. *Lysianax ceratinus*, Walker, "Third Report Higher Crustacea of Liverpool District," Proc. Biol. Soc. Liverpool, vol. iii. p. 200, pl. x. figs. 1-8.

1900. *Lysianax ceratinus*, Norman, Ann. & Mag. Nat. Hist. ser. 7, vol. v. p. 143.

Ilfracombe, Salcombe, Plymouth (*A. M. N.*).

?? AMBASIA DANIELSSONI, Boeck.

1861. ? *Lysianassa atlantica*, Bate & Westwood, vol. i. p. 82.

It is possible that Bate's species may be the male of that to which it is here with doubt referred (see Norman, Ann. & Mag. Nat. Hist. ser. 7, vol. v. 1900, p. 144), or it may be the next species, *Socarnes erythrophthalmus*. Mr. Walker has examined the type in the British Museum, and finds that the telson, instead of being as described by Bate "simple and squamose," is really "cleft to the base, without lateral

* Mr. Walker suggests (Ann. & Mag. Nat. Hist. ser. 6, vol. ix. (1892) p. 136) that while Bate's figures *d, g, h, i* are taken from a *Lysianax*, the entire figure and the tail-piece represent *Orchomene humilis*, Costa.

spines but with a terminal spine in a deep notch in each division."

Bate tells us that the first specimen obtained, which he afterwards referred to *Lysianassa atlantica*, Milne-Edwards, was dredged by him at Plymouth, a locality in which we know *Socarnes erythrophthalmus* to be found; but *Ambasia Danielsseni* is not known there, unless it be the *Lysianassa atlantica*, Bate.

SOCARNES ERYTHROPTHALMUS, D. Robertson.

1892. *Socarnes erythrophthalmus*, D. Robertson, "Second Contribution towards Cat. of Amphip. and Isop. of Firth of Clyde and West Scotland," Trans. Nat. Hist. Soc. Glasgow, vol. iii. p. 6 (separate copy).

1893. *Socarnes erythrophthalmus*, J. Bonnier, "Les Amphipodes du Boulonnais, III.," Bull. Sci. France et Belgique, vol. xxiv. p. 183, pl. vi. figs. 1-10.

Plymouth, 1903; Falmouth, in swarms on dead fish in a crab-pot (A. M. N.).

ACIDOSTOMA OBESUM (Bate).

1861. *Anonyx obesus*, Bate & Westwood, vol. i. p. 98.

1890. *Acidostoma obesus*, Sars, p. 38, pl. xiv. fig. 2.

Salcombe (*Stebbing*); Plymouth (A. M. N.).

PERRIERELLA AUDOUINIANA (Bate).

1861. *Lysianassa Audouiniana*, Bate & Westwood, vol. i. p. 79.

1890. *Aristias Audouinianus*, Meinert, Crustacea Malacostraca in Petersen's "Det Vidensk. Udbytte af 'Hauchs' Togter," p. 152, pl. i. figs. 1-6.

1892. *Perrierella crassipes*, Chevreux & Bouvier, Bull. Soc. Zool. de France, vol. xvii. p. 50 and woodcut.

1892. *Pararistias Audouinianus*, D. Robertson, "Second Contrib. Cat. Amphip. and Isop. Firth of Clyde," Trans. Nat. Hist. Soc. Glasgow, vol. iii. p. 7 (separate copy).

1893. *Perrierella crassipes*, Chevreux & Bouvier, "Amphip. de St. Vaast-la-Houge," Ann. des Sci. Nat. sér. 7, vol. xv. p. 113, pl. ii. figs. 1-12.

1893. *Perrierella Audouiniana*, J. Bonnier, "Les Amphipodes du Boulonnais, III.," Bull. Sci. France et Belgique, vol. xxiv. p. 175, pl. v. figs. 1-10.

1895. *Perrierella Audouiniana*, Walker, "Revision of Amphipods of Liverpool M. B. C. District," Trans. Liverpool Biol. Soc. vol. ix. p. 291.

1895. *Perrierella Audouiniana*, Sars, p. 678, pl. ii. (Supplement) fig. 2 (not *Aristias Audouinianus* of p. 48, pl. xvii. fig. 2, which is *Aristias neglectus*, Hansen: see Sars, p. 675).

Plymouth, near the Duke Buoy; Polperro (a specimen which was named for me by Bate "*Lysianassa Audouiniana*"), A. M. N.

CALLISOMA HOPEI, A. Costa.

1851. *Callisoma Hopei*, A. Costa, in Hope, Cat. Crost. Ital. p. 44, pl. —. fig. 2; and Fauna del Regno di Napoli, Crost. p. 5, pl. viii. bis, fig. 1.
 1857. *Scolopecheirus crenatus*, Bate, Ann. & Mag. Nat. Hist. ser. 2, vol. xix. p. 138.
 1861. *Callisoma crenata*, Bate & Westwood, vol. i. p. 120.
 1890. *Callisoma crenata*, Sars, p. 153, pl. xix. fig. 1.
 1890. *Tryphosa serra*, Meinert, in "Vidensk. Udbytte af 'Hauchs' Togter," Crust. Malac. p. 156, pl. i. figs. 30-38.
 1893. *Callisoma Hopei*, Della Valle, p. 839, pl. vi. fig. 11 and pl. xvi. figs. 1-15.
 1900. *Callisoma Hopei*, Norman, Ann. & Mag. Nat. Hist. ser. 7, vol. v. p. 200.

Plymouth, Polperro (A. M. N.).

HIPPOMEDON DENTICULATUS (Bate).

1861. *Anonyx denticulatus*, Bate & Westwood, vol. i. p. 101.
 1872. *Hippomedon Holbölli*, Boeck, p. 136, pl. v. fig. 6 and pl. vi. fig. 7 (nec *Anonyx Holbölli*, Kröyer).
 1890. *Hippomedon denticulatus*, Sars, p. 56, pl. xx.

Exmouth and Scilly Isles (A. M. N.).

ORCHOMENE HUMILIS (A. Costa).

1853. *Lysianassa humilis*, A. Costa, Rend. Accad. fis. mat. Napoli, p. 172 (*vide* Della Valle).
 1857. *Lysianassa humilis*, A. Costa, "Ricerche su Crost. Amphip. del Reg. di Napoli," Mem. d. R. Accad. Sci. di Napoli, vol. i. p. 187, pl. i. fig. 6.
 1861. *Anonyx Edwardsii*, Bate & Westwood, vol. i. p. 94.
 1867. *Anonyx melanophthalmus*, Norman, "Report Comm. Dredging Hebrides," Rep. Brit. Assoc. for 1866, p. 201.
 1876. *Anonyx serratus*, Stebbing, "The Genera *Hyale* and *Anonyx* and a new *Probolium*," Ann. & Mag. Nat. Hist. ser. 4, vol. xvii. p. 340, pl. xix. figs. 3-3a-e (nec *Orchomene serratus*, Boeck).
 1890. *Orchomene Batei*, Sars, p. 60, pl. xxii.
 1893. *Anonyx humilis*, Della Valle, p. 817, pl. xxvi. figs. 32-37.
 1900. *Orchomene humilis*, Norman, Ann. & Mag. Nat. Hist. ser. 7, vol. v. p. 202.

Plymouth Sound (Bate); Falmouth (W. Webster); Starcross, Plymouth, Polperro, and Falmouth (A. M. N.).

TRYPHOSA NANA (Kröyer).

1846. *Anonyx nanus*, Kröyer, Naturhist. Tidssk. ser. 2, vol. ii. p. 30; Voyages en Scandinavie, &c. pl. xvii. fig. 2.
 1861. ? *Anonyx minutus*, Bate & Westwood, vol. i. p. 108 (not *A. minutus*, Kröyer).
 1876. *Tryphosa nana*, Boeck, p. 181.
 1882. *Tryphosa ciliata*, Sars, p. 81, pl. iii. fig. 4.
 1888. *Tryphosa ciliata*, Walker, Proc. Biol. Soc. Liverpool, vol. ii. p. 172, pl. xiii. figs. 1-4.
 1891. *Orchemenella ciliata*, Sars, p. 69, pl. xxv. fig. 2.

1893. *Tryphosa nana*, J. Bonnier, "Les Amphipodes du Boulonnais, III.," Bull. Sci. France et Belgique, vol. xxiv. p. 191, pl. vi. figs. 1-9.

1895. *Orchemenella nana*, Sars, in Appendix, p. 683.

1900. *Tryphosa nana*, Norman, Ann. & Mag. Nat. Hist. ser. 7, vol. v. p. 203.

It is impossible to say what the *Anonyx minutus* of Bate and Westwood is; it may have been a male of *Orchomene humilis* or of the present species. The rounded side of the head, and the comparatively shallow coxal plates, seem to forbid its being recognized as the *A. minuta* of Krøyer, which is a species which has not been found on the English coast by others. At one time A. M. N. was inclined to refer it to *Orchomene humilis*, but perhaps the description of the first gnathopod, and the figure of the second seem rather to suggest that it was a male of the present species; the more likely since in Bate's "*Anonyx Edwardsi*" we recognize *Orchomene humilis*.

Bate gives Plymouth and Falmouth as localities for his "*Anonyx minutus*." From both of these localities as well as from Polperro and Fowey, A. M. N. has procured *Tryphosa nana*. At Falmouth it has been taken in immense numbers; and it is so common a species in shallow water on the coast, that it can scarcely have failed to come into Bate's hands, but unless it be his "*Anonyx minutus*" he has not recorded it.

TRYPHOSELLA SARSI, J. Bonnier.

1891. *Tryphosa nana*, Sars, p. 76, pl. xxvii. fig. 1 (not *Anonyx nanus*, Krøyer).

1893. *Tryphosella Sarsi*, J. Bonnier, "Les Amphipodes du Boulonnais, III.," Bull. Sci. France et Belgique, vol. xxiv. p. 170, note.

Mouth of the Yealm, 1889; Ilfracombe, 1904 (A. M. N.).

TRYPHOSELLA NANOIDES (Lilljeborg).

1865. *Anonyx nanoides*, Lilljeborg, On the *Lysianassa magellanica*, &c., p. 25, pl. iii. figs. 32-34.

1876. *Tryphosa nanoides*, Boeck, p. 186.

1891. *Tryphosa nanoides*, Sars, p. 79, pl. xxviii. fig. 2.

1893. *Tryphosella nanoides*, J. Bonnier, l. c. p. 171.

Taken on a skate at Polperro (*Laughrin*, in *Mus. Nor.*).

TRYPHOSELLA HÖRINGII (Boeck).

1870. *Tryphosa Höringii*, Boeck, p. 38.

1876. *Tryphosa Höringii*, Boeck, p. 182, pl. iv. fig. 4.

1891. *Tryphosa Höringii*, Sars, p. 77, pl. xxvii. fig. 2.

1893. *Tryphosella Höringii*, J. Bonnier, l. c. p. 171.

Mouth of the Yealm near Plymouth, 1889 (A. M. N.).

NANNONYX GOËSI (Boeck).

1870. *Orchomene Goësi*, Boeck, p. 36.

1876. *Orchomene Goësi*, Boeck, p. 177, pl. iv. fig. 5.

1891. *Nannonyx Goësi*, Sars, p. 72, pl. xxiv. fig. 3.

This very marked little species was taken by A. M. N. and A. O. Walker at Plymouth in 1889, and again by the former in 1903, when a specimen was procured at low-water on Drake Island.

HAPLONYX CICADA (Fabricius).

1780. *Oniscus cicada*, Fabricius, Faun. Grœnl. p. 258.

1844. *Anonyx gulosus*, Krøyer, Naturh. Tidssk. ser. 2, vol. i. p. 611; Voyages en Scandinavie, &c. pl. xiv. fig. 2.

1851. *Anonyx norvegicus*, Lilljeborg, Öfvers. af K. Vet.-Akad. Förhand. p. 22.

1861. *Anonyx Holbölli*, Bate & Westwood, vol. i. p. 104 (not *Anonyx Holbölli*, Krøyer).

1872. *Anonyx gulosus*, Boeck, p. 157, pl. v. fig. 4.

1891. *Haplonyx cicada*, Sars, p. 93, pl. xxxii. fig. 2.

"Mr. Laughrin has sent us a half-grown specimen from Polperro on the coast of Cornwall, and we have dredged it in Plymouth Sound" (*Bate*).

Fam. 3. PONTOPOREIIDÆ.

BATHYPOREIA GUILLIAMSONIANA (Bate).

1856. *Thersites Guiliamsioniana*, Bate, Brit. Assoc. Rep. p. 59, and Ann. Nat. Hist. ser. 2, vol. xix. (1857) p. 146.

1862. *Bathyporeia pilosa*, Bate & Westwood, vol. i. p. 304 (not *B. pilosa*, Lindström).

1891. *Bathyporeia norvegica*, Sars, p. 128, pl. xliii.

1893. *Bathyporeia norvegica*, T. Scott, Eleventh Annual Rep. Fish. Board Scotland, p. 213, pl. v. fig. 22.

1905. *Bathyporeia Guiliamsioniana*, Norman, "Revised Nomenclature Bate & Westwood's 'Sessile-Eyed Crustacea,'" Ann. & Mag. Nat. Hist. ser. 7, vol. xvi. p. 82.

Walker has examined the types of Bate's species in the British Museum, and finds the best specimens to belong to *B. norvegica*, Sars. This species is distinguished from its allies chiefly by the short but distinct tooth which characterizes the produced infero-lateral corners of the third segment of the metasome.

A single full-grown specimen dredged five and a half miles off Ilfracombe in 1904 (A. M. N.).

BATHYPOREIA PELAGICA, Bate.

1875. *Bathyporeia pilosa*, Stebbing, "On the Genus *Bathyporeia*," Ann. & Mag. Nat. Hist. ser. 4, vol. xv. p. 74, pl. iii. fig. 2 (? fig. 1).

1877. *Bathyporeia tenuipes*, Meinert, "Crust. Isop., Amphip. et Decap. Daniæ," Naturhist. Tidssk. ser. 3, vol. xi. p. 101.

1891. *Bathyporeia pelagica*, Sars, p. 129, pl. xlv. fig. 1.

1893. *Bathyporeia pelagica*, T. Scott, Eleventh Ann. Rep. Fish. Board Scotland, p. 213, pl. v. figs. 23-25.

Paignton (*Stebbing*); Salcombe (*Todd*); Ilfracombe, Starcross, Exmouth, Dartmouth, and Plymouth (*A. M. N.*).

BATHYPOREIA ROBERTSONI, Bate.

1891. *Bathyporeia Robertsoni*, Sars, p. 131, pl. xlv. fig. 2.

1893. *Bathyporeia Robertsoni*, T. Scott, Eleventh Ann. Rep. Fish. Board Scotland, p. 213, pl. v. figs. 26-29.

Scilly Isles, 1903 (*A. M. N.*).

BATHYPOREIA GRACILIS, G. O. Sars.

1891. *Bathyporeia gracilis*, Sars, p. 132, pl. xlv. fig. 1.

Scilly Isles (*A. M. N.*). We feel very great doubt whether these forms are entitled to specific distinction. The specimens agree with Sars's descriptions and figures, and it is certainly the case that we did not take two of the forms together in the same spot.

HAUSTORIUS ARENARIUS (Slabber).

1769. *Oniscus arenarius*, Slabber, Natuurkundige Verlustigingen, &c. p. 92, pl. xi. figs. 3, 4.

1818. *Lepidactylus dytiscus*, Say, Journ. Acad. Nat. Sci. Philadelphia, vol. i. p. 379.

1862. *Sulcator arenarius*, Bate & Westwood, vol. i. p. 189.

1878. *Pterigocera arenaria*, Bovallius, K. Svensk. Vet.-Akad. Handl. vol. iv. no. 8, pls. i., ii., iii.

1891. *Haustorius arenarius*, Sars, p. 135, pl. xlv.

This species has had many generic names:—*Haustorius*, Statius Müller; *Lepidactylus*, Say; *Pterigocera*, Latreille; *Bellia*, Bate; and *Sulcator*, Bate.

Paignton (*Stebbing*); Falmouth (*Dr. Leach*, fide *Bate*); Exe Estuary (*Todd*, vi. p. 325); Whitsand Bay near Plymouth (*W. Bateson*, in *Mus. Nor.*).

UROTHOE MARINA, Bate.

1862. *Urothoe Bairdii*, Bate & Westwood, vol. i. p. 193, ♂.

1862. *Urothoe marinus*, Bate & Westwood, vol. i. p. 195, ♀.

1891. *Urothoe marinus*, Stebbing, Trans. Zool. Soc. vol. xiii. p. 16, pl. ii.

Goodrington Sands, South Devon (*Stebbing*); Plymouth (*A. M. N.*).

UROTHOE BREVICORNIS, Bate.

1891. *Urothoe brevicornis*, Stebbing, Trans. Zool. Soc. vol. xiii. p. 23, pls. iii. & iv. c.

Goodrington Sands (*Stebbing*).

UROTHOE ELEGANS, Bate.

1891. *Urothoe elegans*, Stebbing, Trans. Zool. Soc. vol. xiii. p. 13, pl. i.

This species has been taken by Dr. Gough several times, both on the north and south coasts of Cornwall, in his tow-net gatherings (fide *A. M. N.*).

Fam. 4. PHOXOCEPHALIDÆ.

PHOXOCEPHALUS HOLBÖLLI (Kröyer).

Dredged in Plymouth Sound (*Bate*); tow-net, Plymouth Sound, 1889 (*A. M. N.*).

PHOXOCEPHALUS SIMPLEX (Bate).

1861. *Phoxus simplex*, Bate & Westwood, vol. i. p. 140.

1896. *Phoxocephalus simplex*, Calman, "On Species of *Phoxocephalus* and *Apherusa*," Trans. Roy. Irish Acad. vol. xxx. p. 748, pl. xxxii. fig. 3.

1896. *Phoxocephalus pectinatus*, A. O. Walker, "On two new Species of Amphipoda Gammarina," Ann. & Mag. Nat. Hist. ser. 6, vol. xvii. p. 343, pl. xvi. figs. 1-6, and vol. xviii. p. 156.

1896. *Metaphoxus typicus*, Bonnier, Résultats Sci. du Campagne du 'Caudan,' Edriophthalmes, p. 630, pl. xxxvi. fig. 1.

1898. *Metaphoxus pectinatus*, Chevreux, "Révis. des Amphip. de la Côte océanique de France," Assoc. Française pour Avanc. des Sci. p. 477 (no description or figure).

Mr. Walker is still of opinion that his species is not that of Bate. When specimens have been found which correspond with *P. simplex*, and are not *P. pectinatus*, our own opinion will be proved to be wrong. Meanwhile Bate's type specimen of *P. simplex* was from Plymouth Sound, so that the use of that name is certainly right here. Scilly Isles (*A. M. N.*).

PHOXOCEPHALUS FULTONI, T. Scott.

1890. *Phoxocephalus Fultoni*, T. Scott, "Additions to the Fauna of the Firth of Forth," Eighth Ann. Rep. Fish. Board Scotland, p. 327, pl. xii. figs. 10-12; pl. xiii. figs. 13-19.

1893. *Phoxocephalus chelatus*, Della Valle, p. 142, pl. v. fig. 10, and pl. xxxv. figs. 29-35.

1896. *Phoxocephalus Fultoni*, Calman, "On Species of *Phoxocephalus* and *Apherusa*," Trans. Royal Irish Acad. vol. iii. p. 743, pl. xxxi. figs. 1, 2.

Dredged and also taken in tow-net in Plymouth Sound, 1889; and in Mylor Creek, Falmouth (*A. M. N.*).

HARPINIA NEGLECTA, G. O. Sars.

1862. *Phorus plumosus*, Bate & Westwood, vol. i. p. 146 (and of all British authors, but not of Kröyer).
 1890. *Harpinia antennaria*, Meinert, in "Videnskabelige Udbytte af 'Hauchs' Togter," Crust. Malac. p. 160, pl. i. figs. 39-41, ♂.
 1891. *Harpinia neglecta*, G. O. Sars, p. 153, pl. liii. fig. 1.

Dredged in Plymouth Sound (*Bate*); Exmouth, Salcombe, Plymouth (*A. M. N.*).

Fam. 5. AMPELISCIDÆ.

AMPELISCA TYPICA (*Bate*).

1857. *Tetromatus typicus*, Bate, "Synopsis Brit. Edrioph. Crust.," Ann. & Mag. Nat. Hist. ser. 2, vol. xix. p. 139.
 1859. ? *Ampelisca carinata*, Bruzelius, "Skand. Amphip. Gamm.," K. Vet.-Akad. Handl. vol. iii. p. 87, pl. iv. fig. 16, ♂.
 1861. *Ampelisca Gaimardi*, Bate & Westwood, vol. i. p. 127 (not *A. Gaimardi*, Kröyer).
 1869. *Ampelisca carinata*, Norman, "Last Report Dredging Shetland," Brit. Assoc. Rep. for 1868, p. 277, ♂.
 1891. *Ampelisca typica*, G. O. Sars, p. 165, pl. lvii.

Salcombe, Plymouth, and Scilly (*A. M. N.*).

AMPELISCA TENUICORNIS, Lilljeborg.

1869. *Ampelisca lævigata*, Bate & Westwood, vol. ii. p. 504 (nec *A. lævigata*, Lilljeborg).
 1891. *Ampelisca tenuicornis*, Sars, p. 167, pl. lviii. fig. 1.

Salcombe, Dartmouth, Torbay, Plymouth (*A. M. N.*).

AMPELISCA SPINIPES, Boeck.

1893. *Ampelisca spinipes*, T. Scott, Eleventh Ann. Rep. Fish. Board Scotland, p. 214, pl. v. figs. 38-40, ♂.

Off Mewstone, Plymouth; Salcombe, Falmouth (*A. M. N.*).

AMPELISCA BREVICORNIS (*A. Costa*).

1853. *Araneops brevicornis*, A. Costa, Rend. Acc. Napoli, p. 171, and Antip. Napoli, 1856, p. 180, pl. i. fig. 3.
 1855. *Ampelisca lævigata*, Lilljeborg, Efvers. K. Vet.-Akad. Förhand. p. 123.
 1861. *Ampeliscu Belliana*, Bate & Westwood, vol. i. p. 135.

1869. *Ampelisca levigata*, Norman, "Last Rep. Dredging Shetland," Brit. Assoc. Rep. for 1868, p. 277.
 1891. *Ampelisca levigata*, G. O. Sars, p. 169, pl. lix. fig. 1.
 1893. *Ampelisca brevicornis*, Della Valle, p. 473, pl. iv. fig. 4, and pl. xxxviii. figs. 3, 5, 6, &c. A b.
 1893. *Ampelisca levigata*, T. Scott, Eleventh Ann. Rep. Fish. Board Scotland, p. 214, pl. v. figs. 36, 37.
 1900. *Ampelisca brevicornis*, Norman, Ann. & Mag. Nat. Hist. ser. 7, vol. v. p. 342.

Dredged in Plymouth Sound (*Bate*); Start Bay, in seven fathoms (*A. M. N.*).

AMPELISCA MACROCEPHALA, Lilljeborg.

1852. *Ampelisca macrocephala*, Lilljeborg, Æfvers af K. Vet.-Akad. Förhand. p. 7.
 1891. *Ampelisca macrocephala*, G. O. Sars, p. 172, pl. lx. fig. 1.

Twelve fathoms off St. Ives, Cornwall, 1905 (*R. Vallentin!*), a male; of a pale green colour. Unlike the female, the dorsal carina of the first segment of the urosome is greatly elevated.

Fam. 6. AMPHILOCHIDÆ.

AMPHILOCHUS NEAPOLITANUS, Della Valle.

1893. *Amphilochns neapolitanus*, Della Valle, p. 595, pl. xxix. figs. 16, 17.
 1895. *Amphilochns melanops*, A. O. Walker, "Revision Amphip. of Liverpool M. B. C. District," Trans. Liverp. Biol. Assoc. vol. ix. p. 298, pl. xviii. fig. 12, pl. xix. figs. 13-15.
 1900. *Amphilochns neapolitanus*, Norman, "British Amphipoda, IV.," Ann. & Mag. Nat. Hist. ser. 7, vol. vi. p. 34.
 1901. *Amphilochns neapolitanus*, A. O. Walker, "Contrib. Malacos. Fauna of the Mediterranean," Journ. Linn. Soc., Zool. vol. xxviii. p. 300.

Salcombe, Dartmouth, Falmouth, Scilly (*A. M. N.*).

AMPHILOCHUS MANUDEUS, Bate.

1876. *Amphilochns concinnus*, Stebbing, "Some new and little-known Amphip. Crust.," Ann. & Mag. Nat. Hist. ser. 4, vol. xviii. p. 443, pl. xix. figs. 1, a, b, ♀.
 1876. *Callimera acutidigitata*, id. ibid. p. 445, pl. xx. figs. 3, a, b.
 1890. *Amphilochns Boeckii*, Meinert, in "Vidensk. Udbytte af 'Hauchs' Togter," Crust. Malac. p. 160.
 1892. *Amphilochns manudeus*, G. O. Sars, p. 217, pl. lxxiv.

Torbay (*Stebbing*); Falmouth (*A. M. N.*).

AMPHILOCHOIDES ODONTONYX, Boeck.

1870. *Amphilochns odontonyx*, Boeck, p. 51.
 1876. *Amphilochns odontonyx*, Boeck, p. 434, pl. xi. fig. 3.

1892. *Amphilochooides pusillus*, G. O. Sars, p. 222, pl. lxxvi. fig. 1.
 1895. *Amphilochooides odontonyx*, G. O. Sars, p. 690.
 1896. *Amphilochooides odontonyx*, T. Scott, Fourteenth Ann. Rep. Scotch Fish. Board, p. 159, pl. iv. figs. 4-6.

Plymouth Sound in 8 fathoms, 1889 (A. M. N.).

GITANA SARSII, Boeck.

1870. *Gitana Sarsii*, Boeck, p. 52.
 1876. *Gitana Sarsii*, Boeck, p. 439, pl. xi. fig. 2.
 1878. *Amphilochus Sabrina*, Stebbing, "Two new species of Amphipodous Crustacea," Ann. & Mag. Nat. Hist. ser. 5, vol. ii. p. 365, pl. xv. figs. 1 a-g.
 1892. *Gitana Sarsii*, G. O. Sars, p. 228, pl. lxxviii. fig. 1.
 1893. *Gitana Sarsii*, Della Valle, p. 590, pl. xxix. figs. 18-32.

Exmouth and Dartmouth, 1901 (A. M. N.).

PELTOCOXA DAMNONIENSIS (Stebbing).

1885. *Cypridilia damnoniensis*, Stebbing, "Descr. of a new English Amphip. Crustacean," Ann. & Mag. Nat. Hist. ser. 5, vol. xv. p. 59, pl. ii.
 1893. *Peltocoxa damnoniensis*, Della Valle, p. 648, pl. xxx. figs. 19-32, and pl. lx. figs. 9, 10.

Stareross (*C. Parker*, co-types in *Mus. Nor.*); Fowey Harbour, 1903 (A. M. N.).

Fam. 7. STENOTHOIDÆ.

STENOTHOE MONOCULOIDES (Montagu).

Common among shore weeds.

STENOTHOE MARINA (Bate).

Among trawl-refuse from near the Eddystone Lighthouse (*Bate*); Dartmouth and Plymouth (A. M. N.).

STENOTHOE SETOSA, Norman.

1900. *Stenothoe setosa*, Norman, "British Amphipoda, IV. Fams. Stegocephalidæ to Ediceridæ," Ann. & Mag. Nat. Hist. ser. 7, vol. vi. p. 39, pl. iii. figs. 2-4.

The type specimen taken at Plymouth, August 1889 (A. M. N.).

Fam. 8. METOPIDÆ.

METOPA NORVEGICA (Lilljeborg).

1850. *Leucothœ norvegica*, Lilljeborg, "Bidr. till Norra Rysslands och Norrige fauna &c.," K. Vet.-Akad. Handl. vol. ii. p. 335, pl. xx. fig. 4.

1856. *Montagua pollexiana*, Bate, Brit. Assoc. Rep. for 1855, p. 57.
 1861. *Montagua pollexiana*, Bate & Westwood, vol. i. p. 64.
 1887. *Metopa pollexiana*, H. J. Hansen, "Overs. over det vestlige Grönlands Fauna af malak. Havskrebsdyr," Vid. Medd. f. Naturh. Foren. i Kjöbh. p. 92, pl. iii. figs. 5 & 5 a.
 1892. *Metopa pollexiana*, G. O. Sars, p. 269, pl. cxv.
 1900. *Metopa norvegica*, Norman, "Brit. Amphip., IV. Fams. Stegocephalidæ to Cædiceridæ," Ann. & Mag. Nat. Hist. ser. 7, vol. vi. p. 41.

St. Ives, received from Mr. Barlee (*Bate*).

METOPA ALDERI (Bate).

1868. *Montagua norvegica*, Bate & Westwood, vol. ii. p. 500, ♂ (not *Leucothoë norvegica*, Lilljeborg).
 1876. *Metopa chypeata*, var., Boeck, p. 451, pl. xviii. fig. 5, ♂.
 1892. *Metopa Alderi*, G. O. Sars, p. 250, pl. xxxvi.

On a crab at Torbay (*Stebbing*, Trans. Devon Assoc. Advanc. Science, &c., 1871, p. 3, separate copy).

METOPA PUSILLA, G. O. Sars.

1892. *Metopa pusilla*, G. O. Sars, p. 256, pl. xc. fig. 1.

Ilfracombe, 1904 (*A. M. N.*).

[*Probolium Spence-Batei*, *Stebbing*, Ann. & Mag. Nat. Hist. ser. 4, vol. xvii. p. 344, pl. xix. figs. 4, 4 b, cannot be determined. It may have been *Metopa rubrorittata*, G. O. Sars; but as the first gnathopod is not figured (it being evident that what is figured as the first is really a repetition of the second gnathopod), there is not sufficient character in other details to mark the species. It was taken in a tidal pool at Goodrington near Torquay.]

Fam. 9. CRESSIDÆ.

CRESSA DUBIA (Bate).

1861. *Danaia dubia*, Bate & Westwood, vol. i. p. 63.
 1870. *Cressa Schiödtei*, Boeck, p. 65.
 1876. *Cressa Schiödtei*, Boeck, p. 467, pl. xviii. fig. 8.
 1876. *Danaia dubia*, *Stebbing*, "New and little-known Amphipodous Crustacea," Ann. & Mag. Nat. Hist. ser. 4, vol. xviii. p. 444, pl. xix. figs. 2-2 c.
 1890. *Cressa dubia*, J. Bonnier, "Les Amphipodes du Boulonnais," Bull. Sci. de France et Belgique, vol. xxii. p. 300, pl. x. figs. 1-11.
 1892. *Cressa dubia*, T. Scott, Tenth Ann. Rep. Scotch Fish. Board, p. 262, pl. viii. fig. 13 (the mandible).
 1892. *Cressa dubia*, G. O. Sars, p. 278, pl. xcvi. fig. 2, and pl. xcix. fig. 1.

Torquay (*Stebbing*). The type was found by Bate in trawl-refuse from near the Eddystone Lighthouse.

Fam. 10. LEUCOTHOIDÆ.

LEUCOTHOE SPINICARPA (Abildgaard).

1789. *Gammarus spinicarpus*, Abildgaard, Zool. Dan. vol. iii. p. 66, pl. exix. figs. 1-4.

It is *Leucothoe articulosa* (Montagu) of Bate & Westwood. Salcombe, Plymouth, Polperro (A. M. N.). Bate also took it at Plymouth and had received it from Polperro.

Fam. 11. ÆDICERIDÆ.

MONOCULODES CARINATUS, Bate.

1889. *Monoculodes carinatus*, Norman, "Notes on British Amphipoda," Ann. & Mag. Nat. Hist. ser. 6, vol. iii. p. 447, pl. xix. figs. 1-5 (and synonyms).

Synonyms of this species are *Monoculodes Stimpsoni*, Bate & Westw., and *Ædiceros affinis*, Bruzelius, of Boeck, and Della Valle (not Goës).

Plymouth Sound near Duke Buoy, 1889 (A. M. N.)

PERIOCULODES LONGIMANUS (Bate & Westwood).

1869. *Monoculodes longimanus*, Bate & Westwood, vol. ii. p. 507.

1870. *Monoculodes Grubei*, Boeck, p. 85.

1876. *Monoculodes Grubei*, Boeck, p. 269, pl. xvi. fig. 1.

1889. *Monoculodes longimanus*, Norman, "Notes on British Amphipoda," Ann. & Mag. Nat. Hist. ser. 6, vol. iii. p. 451, pl. xx. figs. 6-9.

1892. *Perioculodes longimanus*, G. O. Sars, p. 313, pl. cx. fig. 2, and pl. cxi. fig. 1.

1893. *Ædiceros longimanus*, Della Valle, p. 547, pl. iv. fig. 9, and pl. xxxiii. figs. 32-36.

Exmouth, Starcross, Dartmouth, Plymouth, Fowey, and Scilly Isles (A. M. N.).

SYNCHELIDIUM HAPLOCHELES (Grube). (Pl. VII. figs. 7-9.)

1864. *Kroyeria haplocheles*, Grube, Insel Lussin und ihre Meeresfauna, p. 72.

1869. *Kroyeria brevicarpa*, Bate & Westwood, vol. ii. p. 508.

1892. *Synchelidium brevicarpum*, G. O. Sars, p. 318, pl. cxii. fig. 1.

1893. *Krøyeru haplocheles*, Della Valle, p. 552, pl. iii. fig. 15, and pl. xxxiv. figs. 35-39.

A. M. N. has already given it as his opinion that *Kroyeria brevicarpa*, Bate & Westwood, is the *Kroyeria haplocheles* of Grube; and therefore that the *Pontocrates haplocheles*, Boeck = *Synchelidium haplocheles*, Sars, must have a new name: he has suggested *Synchelidium tenuimanum* ("A

Month on the Trondhjem Fiord," Ann. & Mag. Nat. Hist. ser. 6, vol. xv. 1895, p. 486) ; but the three species of Sars should perhaps be united as having only varietal importance.

Ilfracombe, Exmouth, near Duke Buoy, Plymouth, and Scilly Isles (*A. M. N.*).

Genus PONTOCRATES, Boeck, 1860.

There has been much confusion respecting the species of this genus both on the Continent and in our own country since the time when Boeck, in 1876, made the *Kroyera arenaria* of Bate a synonym of his *Pontocrates norvegicus*. Most records of the occurrence of the several species must therefore be received with some caution.

PONTOCRATES ARENARIUS (Bate). (Pl. VI. figs. 1-4.)

1858. *Kroyera arenaria*, Bate, "Descr. two rare Crustaceans from the coast of Durham, one of them a new species," Trans. Tyneside Nat. Field Club, vol. iv. p. 15, pl. ii. fig. 1.

1858. *Kroyera arenaria*, A. Hancock, "On certain vermiform fossils," *ibid.* p. 19, pl. iv. (its vermiform tracts on the sand).

1862. *Kroyera arenaria*, Bate, Cat. Amphip. Brit. Mus. p. 106, pl. xvii. fig. 4.

1862. *Kroyera arenaria*, Bate & Westwood, vol. i. p. 173.

1889. *Pontocrates arenarius*, Hoek, "Crustacea Neerlandica, II.," Tijdsch. d. Nederl. Dierk. Vereen. ser. 2, vol. ii. p. 23, pl. ix. figs. 7, 8.

First gnathopod (fig. 1) ovate, with undefined, very oblique palm, the finger closing upon the side, and reaching backwards to about that point to which the extremity of the produced and underlying carpus extends. Second gnathopod with the hand long, narrow, and slightly curved (fig. 2) ; chela narrow ; the attached carpus extending far beyond the extremity of the hand to a distance which is subequal in length to the breadth of the chela ; the projected portion is rod-like in form, tapering at the extremity and furnished with numerous setæ (fig. 3).

Hoek's figures of the second gnathopod are very good.

Whitsand Bay near Plymouth, 1889 and 1903 (*A. M. N.*).

PONTOCRATES NORVEGICUS, Boeck. (Pl. VI. figs. 5-8.)

1861. *Pontocrates norvegicus*, Boeck, Forhand. Skand. Naturforsk. 8 Möde, 1860, p. 650.

1870. *Pontocrates norvegicus*, Boeck, p. 91.

1876. *Pontocrates norvegicus*, Boeck, p. 288, pl. xvi. fig. 4.

1895. *Pontocrates norvegicus*, Sars, p. 693, Suppl. pl. vi. fig. 2, pl. vii. fig. 1.

1905. *Krøyeria arenaria*, Reibisch, Faunistisch-biologische Untersuchungen über Amphipoden der Nordsee, p. 182, pl. v. figs. 6-10.

The lettering on the plates vi. and vii. of the Supplement in Sars's work is "*Krøyeria arenaria*," and in the text we read *Pontocrates norregicus*, Boeck (= *Krøyeria arenaria*, Sp.-Bate); but the true *arenaria* has not yet been found in Norway.

First gnathopod (fig. 5) with the hand somewhat triangular, widening towards the extremity which is nearly transversely truncated, forming a distinct palm on which the finger closes, and is equal to it in length; the carpal lobe is slightly longer than the hinder margin of the propodus anterior to the palm. The second gnathopod (fig. 6) is very slender, but scarcely as slender as in *P. arenarius*; the hand narrow and of about equal breadth throughout; the chela (fig. 7) has the thumb not much broader than the finger; the porrected portion of the carpus extends a little beyond the chela, and is remarkable for the spoon-shaped form of its extremity. The basos of the last pereopods (fig. 8) has its hinder margin straight or slightly emarginate, furnished with numerous setæ on its side at some little distance within the margin. The rostrum is short and only slightly curved. Antennules with the three joints of the peduncle subequal in length, though the basal joint is slightly the longer.

This appears to be much more common on our coasts than the last, or it may be that, as it occurs in shallow water, we have more frequently taken it with the dredge; while *P. arenarius*, which is a burrower between tide-marks, has escaped us.

Ilfracombe, Exmouth, Dartmouth, Whitsand Bay, Padstow, and Fowey (A. M. N.).

PONTOCRATES ALTAMARINUS (Bate & Westwood). (Pl. VII. figs. 1-4.)

1862. *Kroyeria altamarina*, Bate & Westwood, vol. i. p. 177.

1893. *Kroyeria arenaria*, Della Valle, p. 554, pl. iv. fig. 1, pl. xxxiv. figs. 18-34.

1895. *Pontocrates altamarinus*, Sars, p. 695, Suppl. pl. vii. fig. 2.

1905. *Krøyeria altamarina*, Reibisch, Faunistisch - biologische Untersuchungen über Amphipoden der Nordsee, p. 183, pl. v. figs. 11-15.

First gnathopod (fig. 1) with the hand long ovate, widest at the commencement of the palm and narrow at the extremities; palm oblique, continuous with the hind margin, of which it occupies more than half, a spine at the commencement of the palm; carpal lobe reaching forwards to the

commencement of the palm. Second gnathopod (fig. 2) of slightly stouter build than in the two preceding species; the hand gently arched near its junction with the wrist. Chela about two and a half times as long as the breadth at its base; the thumb not twice as broad as the finger. The projected carpus (fig. 3) reaches just beyond the extremity of the thumb, round which it curves with a blunt rounded extremity. The rostrum is more produced than usual in the genus, and bends downwards with an even curve. The basal joint of the last pereopods (fig. 4) has its hind margin gently curved; the entire limb is of even greater length than usual in the genus.

The chief character in this species is found in the second gnathopod; in this, as in the following species, the carpal lobe is just sufficiently long to curve round the extremity of the thumb and there end bluntly, but the chela is longer and much more slender than in *Pontocrates arcticus*. The foregoing description is taken from A. M. N.'s Shetland example, which was the type of Bate and Westwood's species.

"Two specimens were taken on the bar" at Salcombe (*R. A. Todd*, vi. p. 203).

[*PONTOCRATES ARCTICUS*, Sars. (Pl. VII. figs. 5, 6.)

1883. *Pontocrates norvegicus*, J. Sparre Schneider, "Norges kyster forekommende Arter af familien Oediceridæ." Tromsø Museums Aarshefter, vol. vi. p. 17, pl. ii. fig. 15, and pl. iii. figs. 21, 22.

1889. *Pontocrates norvegicus*, Hoek, "Crustacea Neerlandica, II.," Tijdsch. Nederl. Dierk. Vereen. ser. 2, vol. ii. p. 24, pl. ix. figs. 8k & 8k'.

1892. *Pontocrates norvegicus*, Sars, p. 315, pl. cxi. fig. 2.

1895. *Pontocrates arcticus*, Sars, p. 693.

The first gnathopod is very like that of the last species; but the hand is rather broader in proportion to the length, and the carpal process longer and reaches to more than half the length of the hand. The hand of the second gnathopod (fig. 5) is more strongly built than in its allies, and especially the chela (fig. 6), which is very short and strong, its length scarcely greater than its breadth across the base; and the thumb is fully twice as wide as the finger. The projected portion of the carpus is extended straight forwards, and reaches a little way beyond the end of the thumb and terminates in a small backward-turned spine-point. The rostrum is short and rather suddenly deflexed. The hind margin of the basal joint of the last pereopod is very slightly curved, its margin crenulated with a seta set in each crenation.

So far as we are aware, this species has not as yet been found south of the Arctic circle. Sars took it at Hasvig, in

West Finmark. Herr Sparre Schneider has found it at Vardö, and A. M. N. at Vadsö, both places in East Finmark.

We have inserted *Pontocrates arcticus* in order to make the account of the northern species of this genus complete.]

The genus *Kroyera*, Bate, 1857, embraced a single species, *Kroyera carinata*, but that type was referable to the previously described genus *Monoculodes* of Stimpson. Thus Bate's genus was a synonym; but in 1858 Bate put another species into his genus *Kroyera*, viz. *K. arenaria*; but there was at that time no redefinition of his genus, and thus Boeck was justified, when he found another species which was congeneric with *K. arenaria*, in forming a new genus for its reception.

HALIMEDON PARVIMANUS (Bate & Westwood).

- 1856. *Westwoodia cæcula*, Bate, Brit. Assoc. Rep. for 1855, p. 58; and 1857, Ann. & Mag. Nat. Hist. ser. 2, vol. xix, p. 139.
- 1862. *Westwoodilla hyalina*, Bate, Cat. Amphip. Brit. Mus. p. 103, pl. xvii. fig. 5; and Bate & Westwood, vol. i. p. 158.
- 1862. *Westwoodilla cæcula*, Bate, Cat. Amphip. Brit. Mus. p. 102, pl. xvi. fig. 5; and Bate & Westwood, vol. i. p. 155.
- 1862. *Ædiceros parvimanus*, Bate & Westwood, vol. i. p. 161.
- 1870. *Halimедon Mölleri*, Boeck, p. 89.
- 1877. *Halimедon Mölleri*, Boeck, p. 281, pl. xiii. fig. 5.
- 1888. *Halimедon parvimanus*, Norman, "Notes on British Amphipoda, I.," Ann. & Mag. Nat. Hist. ser. 6, vol. iii. p. 455, pl. xx. figs. 10-14.
- 1892. *Halimедon Mölleri*, Sars, p. 327, pl. cxv.

As has been already pointed out in the above paper of 1888, the genus *Westwoodilla* cannot be used, as it was founded on a mistake, the first peræopod having been regarded as the second gnathopod. It is remarkable that this error should have been fallen into a second time when *W. hyalina* was described. Bate and Westwood could not recognize their own genus or species, and placed *Ædiceros parvimanus* in an old genus, into which the two species of *Westwoodilla* would have also found a place had they not been entirely misunderstood by the authors. But although the generic name *Westwoodilla* cannot be recognized, it is only just to use one of their specific names, and that of that form which was correctly described appears to be the proper name to retain.

Bate tells us that the types of both "*Westwoodilla cæcula*" and "*Westwoodilla hyalina*" were procured among trawl refuse obtained near the Eddystone Lighthouse. The species was also dredged in 1903 near the Eddystone by A. M. N.

Fam. 12. PARAMPHITHOIDÆ.

PARAMPHITHOE BICUSPIS (Kröyer).

1838. *Amphithoë bicuspis*, Kröyer, "Grönlands Amphipoder," Danske Vid. Selsk. Naturv. og Math. Afh. vol. vii. p. 273, pl. ii. fig. 10.
 1865. *Calliope bidentata**, Norman, Nat. Hist. Trans. Northumb. and Durham, vol. i. p. 24.
 1876. *Pleustes bicuspis*, Boeck, p. 308.
 1893. *Paramphithoë bicuspis*, G. O. Sars, p. 349, pl. cxxiii. fig. 1.

This is not *Pherusa bicuspis* of Bate. Ilfracombe (A. M. N.).

Fam. 13. EPIMERIIDÆ.

EPIMERIA CORNIGERA (Fabricius).

1779. *Gammarus corniger*, Fabricius, Reise nach Norwegen, p. 83 (fide Sars).
 1847. *Acanthonotus testudo*, White, Cat. Brit. Crust. Brit. Mus. p. 51.
 1851. *Epimeria tricristata*, A. Costa, in Hope, Cat. Crust. Ital. p. 46 (fide Della Valle).
 1856. *Acanthonotus Owenii*, Bate, Brit. Assoc. Rep. 1855, p. 58; and 1862, Bate & Westwood, vol. i. p. 232.
 1893. *Epimeria cornigera*, Sars, p. 364, pl. cxxviii.
 1893. *Acanthonotosoma cornigerum*, Della Valle, p. 676, pl. lix. fig. 85.

Falmouth (W. Webster, fide Bate).

Fam. 14. IPHIMEDIIDÆ.

IPHIMEDIA OBESA, Rathke.

Dredged on the north-west of Drake's Island in Plymouth Sound (Bate); Salcombe and Torbay (Stebbing).

IPHIMEDIA MINUTA, G. O. Sars.

1882. *Iphimedia minuta*, G. O. Sars, p. 100, pl. v. fig. 2.
 1893. *Iphimedia minuta*, Sars, p. 379, pl. cxxxiii. fig. 1.

Ilfracombe, Salcombe, Plymouth (A. M. N.). Stebbing (Ann. & Mag. Nat. Hist. ser. 4, vol. xiv. 1874, p. 11, pl. ii. fig. 4) has described and figured an "*Iphimedia Eblanæ* variety" which he had procured in Torbay. This Sars regards as a synonym of *I. minuta*. It may be so, but there are very marked differences: the form of the coxæ of the posterior

* Not described: a MS. name given to it by Spence Bate and used by some other writers.

pairs of peræopods agrees with the figures given of *I. Eblancæ*, but not with the same parts in *I. minuta*, the last peræopod of which is figured separately by Sars, though (for once as regards Sars) it is not quite satisfactory; the true form of the coxa of that leg will be seen better represented in his entire figure of the animal. Again, Stebbing's drawing represents projecting angles in the middle of the sides of the first two segments of the metasome; such projections are characteristic of *I. Eblancæ*, but are not present in *I. minuta*, though in one of our Norwegian specimens of that species we see a very slight tendency towards such projections in the shape of a backward curve of the margin at the same part. In the points to which attention has been directed, Stebbing's *Iphimedia* approaches much more nearly to *I. Eblancæ* than to *I. minuta*. But in *I. Eblancæ*, "the three anterior segments of the pleon are each armed with a well-developed tooth in the median dorsal line;" and Bate, in his original description of the species (Nat. Hist. Review, vol. iv. 1859, p. 229, pl. xvi. fig. 1), prints the foregoing words in *italics*; and further on speaks of the character as "that which most strongly strikes the notice." With these marked differences from both described forms, we feel it necessary to leave the question of Stebbing's *Iphimedia* as a matter to be determined by future investigations; but it is certainly the same species as that described and figured from the Mediterranean by Della Valle under the name *Iphimediopsis Eblancæ* (Della Valle, p. 586, pl. vi. fig. 5, pl. xxxii. figs. 1-19, pl. lviii. fig. 93).

Fam. 15. PHLIADIDÆ.

PEREIONOTUS TESTUDO (Montagu).

1899. *Pereionotus testudo*, Norman, "Notes on Montagu's Hunting-ground, Salcombe Bay," Ann. & Mag. Nat. Hist. ser. 7, vol. iv. p. 288, pl. v. figs. 1, 1a (and synonyms).

In the paper just referred to, Norman announced the rediscovery after sixty-five years of a single specimen of this species of Montagu in Salcombe Bay, where the type specimen had been found: in a subsequent visit in 1903 he procured another specimen in the same spot. Though well known as a Mediterranean species, it has not as yet been found in any second habitat in our seas.

Fam. 16. LAPHYSTIIDÆ.

LAPHYSTIUS STURIONIS, Kröyer.

1842. *Laphystius sturionis*, Kröyer, Naturhist. Tidssk. vol. iv. p. 157.
 1856. *Darwinia compressa*, Bate, Brit. Assoc. Rep. for 1855, p. 58.

Bate states that he received specimens from Laughrin of Polperro, which were procured either from the throat of a Codfish, or from the skin of the common Dogfish (*Squalus acanthias*). The types of Kröyer were taken from under the fins of a Sturgeon and from *Squalus galeus*; Dr. Robertson sent us specimens from the Firth of Clyde which he had taken on the Cod; Della Valle's Mediterranean examples were found on a very large example of *Lophius piscatorius*, and Sars obtained it on *Raia batis*.

Fam. 17. SYRRHOIDÆ.

ARGISSA HAMATIPES (Norman).

1869. *Syrrhoë hamatipes*, Norman, "Last Report Dredging Shetland," Brit. Assoc. Rep. for 1868, p. 279.
 1870. *Argissa typica*, Boeck, p. 45.
 1876. *Argissa typica*, Boeck, p. 206, pl. vii. fig. 2.
 1890. *Chimæropsis danica*, Meinert, in "Vidensk. Udb. af Hauchs Togter," Crust. Malac. p. 467, pl. ii. figs. 42-47.
 1893. *Argissa typica*, G. O. Sars, p. 141, pl. xlviii.
 1893. *Argissa hamatipes*, T. Scott, Eleventh Ann. Rep. Fish. Board Scotland, p. 213, pl. v. figs. 30, 31, ♂.

We have removed this species from the family Pontoporeiidae and placed it in the Syrrhoidæ, as the genus seems to us to have no relation to the former, while its closest neighbour appears to be the genus *Tiron*, to which it shows relationship in its antennules and antennæ, the mouth-organs and the gnathopods, and even the metasome. Sars was not satisfied with its position as placed by him, and suggested its having closer relationship to the Ampeliscidae.

A single specimen taken off Exmouth, 1904 (A. M. N.).

Fam. 18. CALLIOPIIDÆ.

APHERUSA BISPINOSA (Bate).

This is *Amphithoë macrocephala*, M. Sars, 1858; *Paramphithoë elegans*, Bruzelius, 1859; and *Atylus bispinosus*, Bate, 1857.

Starcross and Plymouth (A. M. N.); Falmouth (Bate).

APHERUSA CIRRUS (Bate).

1862. *Pherusa cirrus*, Bate, Cat. Amphip. Brit. Mus. p. 143, pl. xxvii. fig. 6.

1862. *Pherusa bicuspis*, Bate & Westwood, vol. i. p. 253 (not *Amphithoë bicuspis*, Kröyer).

1870. *Halirages borealis*, Boeck, p. 116.

1893. *Apherusa borealis*, Sars, p. 441, pl. clv. fig. 2.

Paignton and Salcombe (*Stebbing*); Exmouth, Salcombe, Plymouth, Scilly (*A. M. N.*); Falmouth (*W. Webster*, fide *Bate*).

APHERUSA OVALIPES, n. sp. (Pl. VIII. figs. 1-8.)

The first two segments of the metasome (fig. 5) with conspicuous backward-directed, acute-pointed, distal projections, and that of the first segment overhangs fully half of the second. First segment of the urosome with the dorsal sulcus well marked. Cephalon equal in length to the combined length of the three following segments; rostral projection distinct; postantennal corner projected in minute equiangular form. First pair of epimeral plates of metasome with a small inferodistal point; second with the point developed into a spine-point; third (fig. 6) with the spine-point in the same position, of larger size, above it the lower half of the hind margin is straight and serrated; serrations about eight, pointing upwards, with a minute cilium in each serration; upper part of hind margin regularly and slightly concave (without the sulcus of such species as *A. bispinosa* and *A. megalops*). Eye large and round. The antennæ of both pairs long and slender, closely resembling those of *A. Clevei*, the peduncle of the upper reaching to the end of the penultimate joint of that of the lower; in the female the peduncle is very sparingly ciliated; in the male the approximating faces of the peduncles bear series of fascicles of short stiff sensory bristles. Gnathopods of quite different form from those of allied species except *A. Clevei*; first pair (fig. 1) rather larger than the second (fig. 2); both pairs in male slightly larger than those of female, in other respects there is no marked difference. The hand exceeds in length that of the combined three preceding joints; the form is long ovate, widest at the middle; upper margin only slightly curved, lower well arched; the nail, which bears a cilium near its point, when reflexed reaches about half-way along the hinder margin, which margin where thus closed over by the nail is beset with numerous slender spines, while two or three of larger size define the proximal end of what con-

stitutes the palm. The peræopods are very similar to those usual in the genus; the front margin of the propodos in the earlier limbs has usually four clusters of spines, that of the last pair with five clusters. The last uropods (fig. 7) have their branches not only spined as usual, but their meeting margins and both sides of the terminal points are microscopically serrulated. The telson (fig. 8) is of the usual simple elongate-triangular form, perhaps rather longer in proportion to its breadth than in allies. Length 4 to 4.5 mm.

This species, which had been put aside for description, was seen, on the receipt of Prof. Sars's account of *Apherusa Clevei**, to be very near to it in character. We therefore thought it well to send specimens to him for his comparison and opinion; his judgment on it was, "It is a very distinct species." It appears to us to be, as it were, an exaggerated form of *A. Clevei*, from which it chiefly differs in the much greater development of the dorsal spines of the first two segments of the metasome, and the character of the hinder margin of its third segment.

Starcross; Plymouth, not uncommon; Scilly Isles (*A. M. N.*).

APHERUSA JURINII (H. Milne-Edwards).

1830. *Amphithoë Jurinii*, H. Milne-Edwards, Ann. Sci. Nat. vol. xx. p. 376; and 1840, Hist. Nat. des Crust. vol. iii. p. 30, pl. i. fig. 2.

1843. *Amphithoë norvegica*, Rathke, Beitr. z. Faun. Norw. p. 83, pl. iv. fig. 6.

1862. *Gossea microdeutopa*, Bate & Westwood, vol. i. p. 277.

1867. *Calliopius norvegicus*, Boeck, p. 348, pl. xxii. fig. 6.

1893. *Apherusa Jurinii*, Sars, p. 445, pl. clvii. fig. 1.

Mr. A. O. Walker has examined Bate's specimens of *Gossea microdeutopa* in the Brit. Mus., and refers them to this species.

Ilfracombe (*Stebbing*), where also the type of *Gossea microdeutopa*, described by Bate, was taken by Mr. Gosse. Dartmouth, Salcombe, Plymouth, Fowey (*A. M. N.*).

CALLIOPIUS RATHKEI (Zaddach).

1844. *Amphithoë Rathkei*, Zaddach, Synops. Crust. Pruss. prodromus, p. 6.

1893. *Calliopius Rathkei*, Sars, p. 447, pl. clvii. fig. 2.

We consider this to be only a smaller form of *Calliopius*

* 'Conseil Permanent International pour l'Exploration de la Mer.' Publications de Circonstance: No. 10. G. O. Sars, "On a new (Planktonic) species of *Apherusa*" (March 1904).

leviusculus, Kröyer, a name which therefore we should rather have used.

Exmouth and Teignmouth Bay (*A. M. N.*).

Fam. 19. A T Y L I D Æ.

PARATYLUS SWAMMERDAMII (H. Milne-Edwards).

Common all along the coast. Ilfracombe, Exmouth, Teignmouth Bay, Dartmouth, Plymouth, Scilly Isles (*A. M. N.*).

PARATYLUS VEDLOMENSIS (*Bate*).

Exmouth, 1904 (*A. M. N.*).

PARATYLUS UNCINATUS, G. O. Sars.

1882. *Atylus uncinatus*, G. O. Sars, p. 101, pl. v. figs. 3, 3 a.

1893. *Paratylus falcatus*, G. O. Sars, p. 465, pl. clxiv. fig. 1.

1895. *Paratylus uncinatus*, G. O. Sars, p. 697.

Sars united his species with *A. falcatus*, Metzger; but subsequently separated them. Mr. Walker agrees in this, and believes that Metzger's amphipod, which has the segments of the metasome furnished with dorsal teeth, is distinct (Walker, "Revis. Amphipoda Liverpool M. B. C. District," Trans. Liverp. Biol. Soc. vol. ix. 1895, p. 306).

Whitsand Bay near Plymouth (*A. M. N.*); the bar at Salcombe (*Todd*).

DEXAMINE SPINOSA (Montagn).

This and not the next is the *Amphithoë tenuicornis* of Rathke.

Salcombe, mouth of the Yealm, Plymouth, Falmouth, Scilly Isles (*A. M. N.*).

DEXAMINE THEA, Boeck.

1862. *Dexamine tenuicornis*, Bate & Westwood, vol. i. p. 240.

1870. *Dexamine thea*, Boeck, p. 107.

1876. *Dexamine thea*, Boeck, p. 315, pl. xii. fig. 1.

1893. *Dexamine thea*, Sars, p. 477, pl. clxviii. fig. 1.

Exmouth, Dartmouth, Falmouth (*A. M. N.*).

TRITÆTA GIBBOSA (*Bate*).

1861. *Amphithoë brevitarsis*, Grube, Ein Ausflug nach Triest und dem Quarnero, p. 135.

1862. *Atylus gibbosus*, Bate & Westwood, vol. i. p. 248.

1870. *Lampra gibbosa*, Boeck, p. 108.

1876. *Tritæta gibbosa*, Boeck, p. 318, pl. xii. fig. 2.
 1881. *Dexamine dolichonyx*, Nebeski, Zur Kennt. d. Amphipoder der Adria, p. 35, pl. iv. fig. 40.
 1890. *Tritæta dolichonyx*, A. O. Walker, "Report Higher Crustacea of Liverpool Bay, taken in 1889," Trans. Liverpool Biol. Soc. vol. iv. p. 249, pl. xvi. figs. 4-6.
 1893. *Tritæta gibbosa*, Sars, p. 479, pl. clxviii. fig. 2.

The remarkable second gnathopod of the male of this species is figured by Walker. In sponges, Meadfoot, Torquay (*Stebbing*); Ilfracombe, 1904; Barn Pool, Plymouth, 1889 (*A. M. N.*).

GUERNEA COALITA (Norman).

1868. *Helleria coalita*, Norman, "Crust. Amphip. new to Science or to Britain," Ann. & Mag. Nat. Hist. ser. 4, vol. ii. p. 418, pl. xxii. fig. 8 & pl. xxiii. figs. 1-6.
 1887. *Prianassus Nordenskiöldii*, H. J. Hansen, "Overs. over det vestlige Grönlands Fauna af malakostrake Havskrebsdyr," Vidensk. Meddel. fra den Naturh. Foren. i Kjöbenhavn, p. 82, pl. ii. figs. 7-7 e; pl. iii. figs. 1-1 e.
 1887. *Guernea coalita*, Chevreux, Crust. Amphip. de la côte ouest de Bretagne, p. 15, woodcuts 1, 2 (separate copy).
 1887. *Guernea lævis*, id. ibid. p. 41.
 1893. *Guernea coalita*, Della Valle, p. 570, pl. xxxi. figs. 20-33, pl. lviii. fig. 80.

Plymouth, tow-net, 1889; Fowey; Falmouth (*A. M. N.*).

Fam. 20. GAMMARIDÆ.

ISÆA MONTAGUI, H. Milne-Edwards.

1862. *Isæa Montaguï*, Bate & Westwood, vol. i. p. 215.
 1893. *Isæa Montaguï*, Della Valle, p. 679, pl. vi. fig. 7, pl. xiii. figs. 30-42.

Bate procured *Isæa* from the "back and branchial chambers" of *Mamæia squinado*, taken near the Eddystone Lighthouse, and says, "they seemed indeed to exist among the thick stiff fur on the carapace of this spider-crab, as if they were in their accustomed habitat, their prehensile legs being peculiarly adapted for holding themselves on that animal." Similarly Della Valle procured it at Naples: "sul dorso e nella cavità branchiale dell *Maia squinado*." It is on this spider-crab that Stebbing has taken it at Torbay, and that *A. M. N.* has procured it at Plymouth and from Polperro.

AMATHILLA HOMARI (Fabricius).

1798. *Gammarus homari*, Fabricius, Supp. Entom. Syst. p. 418.
 1843. *Gammarus angulosus*, Rathke, Beitr. z. Fauna Norwegens, p. 72, pl. iii. fig. 3.
 1862. *Amathilla Sabini* (Leach), Bate & Westwood, vol. i. p. 361, and synonyms.

1862. *Graia imbricata*, Bate & Westwood, vol. i. p. 152 (very young).
 1893. *Amathilla homari*, Sars, p. 490, pl. clxxii. and pl. clxxiii.
 fig. 1.
 1893. *Amathilla angulosa*, id. *ibid.* p. 492, pl. clxxiii. fig. 2.

We regard *Gammarus angulosus* as a small form of *Amathilla homari*, and not as a distinct species. All the examples from Devon and Cornwall belong to the small form.

Falmouth and Polperro (*fide Bate*) ; Torquay (*Stebbing*) ; Ilfracombe and Fowey (*A. M. N.*).

GAMMARUS CAMPYLOPS, Leach.

1893. *Gammarus campylops*, G. O. Sars, p. 500, pl. clxxvi. fig. 2.

The telson figured by Norman as belonging to this species ("Notes on British Amphipoda," *Ann. & Mag. Nat. Hist.* ser. 6, vol. iv. 1889, p. 139, pl. xii. fig. 13) belongs to what is now called *G. Duebeni*, Lilljeborg (*vide* Sars).

"Common on *Zostera* Bank, east side of Salcombe Harbour" (*Todd*, vi. p. 203).

GAMMARUS MARINUS, Leach.

1889. *Gammarus marinus*, Hoek, "Crustacea Neerlandica, II.,"
Tijdsch. Ned. Dierk. Vereen. ser. 2, vol. ii. p. 32, pl. vii. figs. 8 & 9.
 1889. *Gammarus marinus*, Norman, l. c. p. 138, pl. xii. fig. 12.

Plymouth (*Bate*) ; Exmouth, and the Breakwater, Plymouth (*A. M. N.*).

GAMMARUS LOCUSTA (Linné).

1889. *Gammarus locusta*, Norman, l. c. p. 137, pl. xii. fig. 11.
 1889. *Gammarus locusta*, Hoek (*partim*), l. c. pl. x. fig. 10.

Common everywhere between tide-marks.

GAMMARUS PULEX, De Geer.

1889. *Gammarus locusta*, var. B, Hoek, l. c. p. 45, pl. x. fig. 12.

Common in streams and ponds.

MELITA PALMATA (Montagu).

Ilfracombe and Seaton (*Parfitt*) ; Torquay (*Stebbing*) ; Starcross, Salcombe, Plymouth, Polperro (*A. M. N.*).

MELITA OBTUSATA (Montagu).

Melita proxima, Bate, is a variety, and *Megamæra Alderi*, Bate, the female of this species.

Salcombe (*Montagu*) : Plymouth (*Bate*); Salcombe, Plymouth, Scilly Isles (*A. M. N.*).

MELITA GLADIOSA, *Bate*.

Plymouth (*Bate*) : Salcombe, mouth of the Yealm, Plymouth, Falmouth (*A. M. N.*).

NIPHARGUS SUBTERRANEUS (*Leach*).

1814. *Gammarus subterraneus*, *Leach*, *Edinb. Encyclop.* vol. vii. p. 403.

1835. *Gammarus puteanus*, *Koch*, *Deutschlands Crustaceen*, *Myriapoden und Arachniden*, Heft 5, pl. 2.

1853. *Niphargus stygius*, *Westwood*, *Proc. Linn. Soc.* no. li. p. 218 (*vide Chilton*).

1855. *Niphargus aquilex*, *Schiödte*, *Oversigt K. Danske Vidensk. Selsk. Forhand.* p. 349.

1863. *Niphargus aquilex*, *Bate & Westwood*, vol. i. p. 315.

1900. *Niphargus subterraneus*, *Chilton*, "The Subterranean Amphipoda of the British Isles," *Journ. Linn. Soc., Zool.* vol. xxviii. p. 147, pls. xvi. & xvii. fig. 1.

For full synonymy see *Chilton's* paper. It is a question what the specific name of this species should be. *Leach* was the first to describe a well-shrimp, and as this is the commonest species in our islands it ought, we think, to bear his name. *Chilton* referred to *Koch*, Heft 36, pl. 22, but this we regard with some doubt as representing this species, while his earlier figure of 1835 is certainly a synonym.

Mannamead, near Plymouth (*Bate*). In a pump in *St. James's Street*, *Exeter*, a female with eggs, May 6, 1873; also one from a pump on *Southernhay*, *Exeter* (*Parfitt*). *Kenton*, near *Exeter* (*Mr. Pycroft*, in *Mus. Nor.*).

MÆRA GROSSIMANA (*Montagu*).

1830. *Gammarus Impostū*, *H. Milne-Edwards*, *Ann. Sci. Nat., Zool.* vol. xx. p. 368; and *Hist. Nat. Crust.* 1840, vol. iii. p. 49, ♂.

1862. *Mæra grossimana*, *Bate & Westwood*, vol. i. p. 350, ♂.

1866. *Mæra Donatoi*, *Heller*, *Beit. zur näh. Kennt. der Amphip. des Adriat. Meeres*, p. 41, pl. iii. fig. 26, ♀.

Exmouth, Teignmouth Bay, Salcombe, mouth of the Yealm, Plymouth, Falmouth (*A. M. N.*).

MÆRA OTHONIS (*H. Milne-Edwards*).

1830. *Gammarus othonis*, *H. Milne-Edwards*, *Ann. des Sci. Nat., Zool.* vol. xx. p. 373, pl. x. figs. 11-13; and *Hist. Nat. Crust.* 1840, vol. iii. p. 50, ♀.

1857. *Gammarus longimanus*, Bate, Ann. & Mag. Nat. Hist. ser. 2, p. 15, ♂ (separate copy) *.
 1859. *Gammarus lævis*, Bruzelius, Bid. till känn. om Skand. Amphip. Gammarid. p. 60, pl. ii. fig. 10, ♂ ♀.
 1893. *Mæra othonis*, Sars, p. 518, pl. clxxxii. fig. 1.
 1896. *Mæra Brooki*, T. Scott, Proc. Roy. Phys. Soc. Edinb. vol. xiii. p. 173, pl. v.

We have come to the conclusion that *Mæra Brooki* is a slight variety of a large male of this species. The figure of the second gnathopod of the male by Sars is not quite satisfactory, as it must have belonged to an immature example.

Salcombe (*Stebbing*) ; Ilfracombe, mouth of the Yealm (*A. M. N.*) ; Plymouth, Polperro, and St. Michael's Mount (*Bate*).

CERADOCUS SEMISERRATUS (*Bate*).

1862. *Megamæra semiserrata*, Bate & Westwood, vol. i. p. 401.
 1899. *Ceradocus semiserratus*, Stebbing, "Amphipoda from the Copenhagen Museum and other Sources," Trans. Linn. Soc., Zool. ser. 2, vol. vii. p. 426.

Near the Mallard Buoy, Plymouth Sound (*Bate*) ; Salcombe and the mouth of the Yealm (*A. M. N.*) ; near the Eddystone Lighthouse (*A. O. Walker*).

MEGALUROPUS AGILIS, Norman.

1889. *Megaluropus agilis*, Norman, "Notes on British Amphipoda," Ann. & Mag. Nat. Hist. ser. 6, vol. iii. p. 446, pl. xviii. figs. 1-10 ; and vol. iv. p. 123, pl. x. figs. 15-17.
 1889. *Megaluropus agilis*, Hoek, "Crustacea Neerlandica," Tijdsch. Nederl. Dierk. Vereen. ser. 2, vol. ii. p. 28, pl. vii. fig. 7, pl. viii. fig. 3, pl. ix. fig. 3.
 1890. *Cheirocratus Drechselii*, Meinert, in "Vidensk. Udbytte af 'Hauchs' Togter," Crust. Malac. p. 170, pl. ii. figs. 48-52.
 1893. *Megaluropus agilis*, Della Valle, p. 695, pl. iii. fig. 9, pl. xxxiv. figs. 1-17.

Megaluropus would seem to be common on the Devon and Cornish coasts, as it has been taken at Ilfracombe, Exmouth, Teignmouth Bay, Dartmouth, Starcross, Whitsand Bay, Plymouth, and the Scilly Isles (*A. M. N.*).

ELASMOPUS RAPAX, A. Costa.

1853. *Elasmopus rapax*, A. Costa, Rend. Accad. fis. mat. Napoli, p. 175 (*vide* Della Valle).
 1856. *Gammarus brevicaudatus*, Bate, Brit. Assoc. Rep. for 1855, p. 58, ♀.
 1857. *Elasmopus rapax*, A. Costa, "Ricerche sui Crost. Amphip. del Regno di Napoli," Mem. d. R. Accad. d. Sci. di Napoli, vol. i. p. 212, pl. iv. fig. 5, ♂.

* The species was only named, not described, by Leach and W. Thompson, authors quoted by Bate and Westwood.

1862. *Megamœra brevicaudata*, Bate & Westwood, vol. i. p. 409, ♀.
 1889. *Elasmopax rapax*, Norman, "Notes on British Amphipoda,"
 Ann. & Mag. Nat. Hist. ser. 6, vol. iv. p. 124, pl. xi. figs. 1-8.

In the paper last referred to full synonymy is given. It has since been described and figured by Sars and by Della Valle. In Norman's paper the changes with growth in the second gnathopod of the male is illustrated. Della Valle describes three species of *Elasmopus* from Naples: are these really true species, or are they different degrees of development of one form?

Bate dredged his "*Megamœra brevicaudata*" off Plymouth.

GAMMARELLA BREVICAUDATA (H. Milne-Edwards).

- 1813-1814. ? *Pherusa fucicola*, Leach, Edin. Encycl. vol. vii.,
 Appendix to Crustaceology, p. 482.
 1862. *Gammarella brevicaudata*, Bate & Westwood, vol. i. p. 330, ♂.
 1862. *Gammarella Normani*, Bate & Westwood, vol. i. p. 333, ♀.
 1874. *Gammarella brevicaudata*, Stebbing, Ann. & Mag. Nat. Hist.
 ser. 4, vol. xiv. p. 13, pl. ii. figs. 3-3g.

From observations made by Mr. A. O. Walker on original specimens in the British Museum, he has come to the conclusion that the type specimens of *Pherusa fucicola*, Leach, are really the female of this species. The figure of *Pherusa fucicola* in Bate and Westwood is stated to be taken from one of these specimens, but is full of errors which make it quite unrecognizable. On the other hand, Mr. Walker contends that Bate's *Pherusa fucicola* of the Cat. Amphip. Brit. Mus. is drawn from an entirely different genus, and must be referred to *Apherusa Jurinei*, H. Milne-Edwards (see Walker, "On *Pherusa fucicola*, Leach," Ann. & Mag. Nat. Hist. ser. 6, vol. vii. p. 418).

The name *Pherusa fucicola*, Leach, has not the slightest claim for adoption. The description given by the author was not only utterly inadequate but in part absolutely wrong, so that no one could possibly have guessed what species was meant.

Torbay and Salcombe (*Stebbing*); mouth of the Yealm, Falmouth, Scilly Isles (*A. M. N.*); Polperro (*Laughrin*, fide *Bate*).

CHEIROCRATUS SUNDEVALLI (Rathke).

1843. *Gammarus Sundevalli*, Rathke, Beitr. z. Fauna Norwegens,
 p. 65, pl. iii. fig. 2, ♂.
 1862. *Liljeborgia shetlandica*, Bate & Westwood, vol. i. p. 206, ♂.
 1862. *Protomedea Whitei*, id. ibid. p. 300, ♀.
 1874. *Liljeborgia Normanni*, Stebbing, Ann. & Mag. Nat. Hist.
 ser. 4, vol. xiv. p. 10, pl. i. figs. 1a-c; and 1876, vol. xvii. p. 76,
 pl. v. fig. 4.

1880. *Cheirocratus brevicornis*, Hoek, "Carcinologisches," Tijdschr. Ned. Dierk. Vereen. vol. iv. p. 142, pl. x. figs. 10-13, ♂.
 1889. *Cheirocratus Sundevalli*, Norman, "Notes on British Amphipoda," Ann. & Mag. Nat. Hist. ser. 6, vol. iv. p. 130, pl. xi. figs. 9, 10; and pl. xii. figs. 1-3, ♂ ♀.
 1893. *Cheirocratus Sundevalli*, Sars, p. 524, pl. clxxxiv. & pl. clxxxv. fig. 1.

For other references see Norman's paper.

Exmouth, Salcombe, Plymouth (A. M. N.).

CHEIROCRATUS INTERMEDIUS, G. O. Sars.

1893. *Cheirocratus intermedius*, Sars, p. 527, pl. clxxxvi. fig. 1.
 1896. *Cheirocratus intermedius*, T. Scott, Fourteenth Ann. Report Scotch Fish. Board, p. 160, pl. iv. fig. 7.

A single male taken at Plymouth in 1889 (A. M. N.).

Fam. 21. LILLJEBORGIIDÆ.

LILLJEBORGIA PALLIDA, Bate.

1862. *Liljeborgia pallida*, Bate & Westwood, vol. i. p. 203.
 1889. *Liljeborgia pallida*, Norman, "Notes on British Amphipoda," Ann. & Mag. Nat. Hist. ser. 6, vol. iv. p. 116, pl. x. fig. 10.
 1893. *Liljeborgia pallida*, Sars, p. 350, pl. clxxxvii.

Eastern side of Drake's Island, Plymouth Sound (Bate).

Fam. 22. AORIDÆ.

MICRODEUTOPUS ANOMALUS (Rathke).

1862. ? *Microdeutopus anomalus*, Bate & Westwood, vol. i. p. 291, ♀*.
 1893. *Microdeutopus anomalus*, Sars, p. 541, pl. exci., ♂ ♀.

Exmouth, Starcross, mouth of the Yealm, Falmouth (A. M. N.).

MICRODEUTOPUS DANMONIENSIS (Bate).

1856. *Lembos danmoniensis*, Bate, Brit. Assoc. Rep. for 1855, p. 58.
 1862. *Microdeutopus gryllotalpa*, Bate & Westwood, vol. i. p. 289 (nec *Microdeutopus gryllotalpa* of Costa).
 1893. *Microdeutopus danmoniensis*, Sars, p. 542, pl. excii. fig. 1.

We are not sure that Bate and Westwood's figure represents the *M. danmoniensis* of Sars, and not *M. anomalus*. We have, however, seen the former from different parts of the British coasts, and have regarded it as *M. anomalus* not fully developed. We have not seen it from the Devon and Cornish coasts, but Bate gives as localities for his *M. gryllotalpa*: Plymouth in a sponge (*H. Stewart*); Polperro (*Laughrin*).

* Bate's figure may represent this or *Aora gracilis*, ♀. See Norman, "Last Report Dredging Shetland," p. 281.

MICRODEUTOPUS GRYLLOTALPA, A. Costa.

1853. *Microdeutopus gryllotalpa*, A. Costa, Rend. della Reale Accad. delle Sci. di Napoli, p. 178 (*fide* Sars).
 1857. *Microdeutopus gryllotalpa*, A. Costa, "Ricerche sui Crost. Amphip. del Regno di Napoli," Mem. d. R. Accad. d. Sci. di Napoli, vol. i. p. 231, pl. iv. fig. 10.
 1859. *Autonoe grandimana*, Bruzelius, Bid. till känn. om Skand. Amphip. Gammaridea, p. 26, pl. i. figs. 3-3 e.
 1893. *Microdeutopus gryllotalpa*, Sars, p. 543, pl. excii. fig. 2.
 1893. *Microdeutopus gryllotalpa*, Della Valle, p. 411, pl. i. fig. 12; pl. xi. figs. 25-43.

Taken on *Mamaia squinado* at Plymouth, 1889 (A. M. N.).

AORA GRACILIS, Bate.

In sponge off the Clock Tower, Exe Estuary (*Todd*, vi. p. 325); Starcross, mouth of the Yealm, Plymouth Sound, and Scilly Isles (A. M. N.).

STIMPSONELLA CHELIFERA (Bate).

1878. *Stimpsonia chelifera*, Stebbing, "Notes on Sessile-Eyed Crustacea," Ann. & Mag. Nat. Hist. ser. 5, vol. i. p. 34, pl. v. figs. 2, 3.
 1893. *Stimpsonella chelifera*, Della Valle, p. 424, pl. lvi. figs. 42-45.

Salcombe (*W. Webster*, *fide* Bate); Torbay (*Stebbing*).

LEMBOS WEBSTERI, Bate.

1857. *Lembos Websteri*, Bate, Ann. & Mag. Nat. Hist. ser. 2, vol. xix. p. 142.
 1862. *Microdeutopus Websteri*, Bate & Westwood, vol. i. p. 291, ♂.
 1869. *Microdeutopus Websteri*, Norman, "Last Report Dredging Shetland," Brit. Assoc. Report for 1868, p. 281.
 1876. *Microdeutopus bidentatus*, Stebbing, "New species of Sessile-Eyed Crustacea, &c.," Ann. & Mag. Nat. Hist. ser. 4, vol. xvii. p. 73, pls. iv. & v. fig. 1.
 1893. *Autonoe Websteri*, Sars, p. 547, pl. exciv.
 1893. *Autonoe longipes*, Della Valle, p. 403, pl. iii. fig. 13, and pl. x. figs. 20-30 (nec *Gammarus longipes*, Lilljeborg).
 1895. *Lembos Websteri*, Stebbing, "Notes on Amphipods old and new," Ann. & Mag. Nat. Hist. ser. 6, vol. xvi. p. 206.

Salcombe (*Stebbing*); Falmouth (*W. Webster*, *fide* Bate); Plymouth (A. M. N.).

We have adopted the genus *Lembos* in preference to *Autonoe*, because the argument used in its favour by Stebbing seems to be just; but really neither name has a *right* to be employed, since both were synonyms at the time of their institution.

Genus COREMAPUS, Norman.

General characters of antennules, antennæ, peræopods, and urosome as those of the family. First gnathopods as in *Microdeutopus*. Second gnathopods scarcely subchelate; meros produced and underlying the carpus to more than half its length; carpus and propodos subequal in length, narrow, parallel-sided; nail small, not longer than the narrow extremity of the propodos; the produced linguiform portion of the meros, together with the entire length of the carpus and propodos, furnished with a regularly disposed single row of very long plumose setæ. The basos, which in the genera *Leptocheirus* and *Goesia* bears a brush of setæ of a similar character, is in *Coremapus* devoid of it.

COREMAPUS VERSICULATUS (Bate). (Pl. IX. figs. 8-10.)

1862. *Microdeutopus versiculatus*, Bate & Westwood, vol. i. p. 295, ♀.
 1869. *Microdeutopus versiculatus*, Norman, "Last Report Dredging Shetland," Brit. Assoc. Rep. for 1868, p. 282, ♂ ♀.
 1874. *Microdeutopus versiculatus*, Stebbing, Ann. & Mag. Nat. Hist. ser. 4, vol. xiv. p. 12, pl. i. figs. 2-2f, ♂ ♀.
 1905. *Coremapus versiculatus*, Norman, "Revised Nomenclature of the Species described in Bate & Westwood's 'British Sessile-Eyed Crustacea,'" Ann. & Mag. Nat. Hist. ser. 7, vol. xvi. p. 78.

Plymouth (*Bate*); Salcombe (*Stebbing*); Salcombe, Plymouth, and Falmouth (*A. M. N.*).

LEPTOCHEIRUS GUTTATUS (Grube). (Pl. IX. figs. 4-7.)

1866. *Protomedeia guttata*, Grube, "Beitr. z. Kennt. Istrien Amphipoderfauna," Archiv f. Naturgesch. xxxii. Jahrg. vol. i. p. 408, pl. x. fig. 3.
 1887. *Leptocheirus tricristatus*, Chevreux, "Crust. Amphip. de la côte ouest de Bretagne," Bull. Soc. Zool. France, vol. xii. p. 23, pl. v. figs. 3, 4, and woodcut on p. 6.
 1893. *Leptocheirus guttatus*, Della Valle, p. 430, pl. xii. figs. 15-24.
 1900. *Leptocheirus guttatus*, Chevreux, Résultats Campag. sci. Prince de Monaco, Fasc. xvi. Amphipodes de l'Irondelle, p. 92.

The first segment of the urosome (fig. 6) is elevated dorsally with a hump-like process, generally slightly upturned at the extremity and abruptly truncated behind; this process is generally (apparently not invariably) accompanied by a lappet-like backward directed process on each side. Chevreux's description is "Segmentum abdominis quartum in margine posteriore dentibus tribus armatum."

The first joint of the antennules has a spine on the under side at the extremity; second joint as long as the first, but much more slender; third half as long as the second;

flagellum of about eleven articulations, accessory appendage as long as two joints of the flagellum, three-jointed ; third joint minute.

The first gnathopods have the palm transverse and slightly convex (fig. 4); the finger not longer than the palm, its edge bearing setæ but no spine. Second gnathopods with coxa (not produced) rounded at the corner and edged with short simple setæ ; the limb (fig. 5) resembles in general character that of *L. pilosus*, but the wrist and hand are proportionately not so broad ; the nail is equal to half the hand in length.

First peræopod with the nail much produced, as long as the propodos. Last peræopod of great length, when stretched backwards extending beyond the uropods by the entire length of the greatly produced propodos and part of the carpus ; propodos bearing spines situated at nearly equal distances apart ; the nail simple (not bidentate). First and second uropods with falcate external processes reaching to half or more than half their length, armed laterally with ordinary spines, but at their extremities bearing short stumpy spines characteristic of the genus. Last uropods (fig. 7) small, with outer branch entirely devoid of lateral setæ or spines, and the extremity carrying about six setæ ; inner branch slightly shorter, without lateral setæ or spines, terminating in a single spine. Telson of the usual form in the genus, abruptly truncate behind, with the corners slightly exserted.

Length of ♀ laden with ova 4 mm.

Falmouth Harbour, not rare in 1884 (*A. M. N.*).

The species is new to our fauna.

It is not without hesitation that we have followed Chevreux in merging his species in that of Grube. We consider the chief characters of the species to be :—1st, the hump on the first segment of urosome ; 2nd, the three-jointed appendage of antennules ; 3rd, the great length of the nail of the first peræopod ; 4th, the greatly produced last peræopod with its finger simple ; 5th, the character of the last uropod. In Grube's figure the nails of the earlier peræopods are represented as short, and the last peræopods as much shorter than they are really, but we must not expect accuracy in details like this in 1866. In Della Valle's figures we cannot recognize the short last peræopod or the last uropod as correct, while the meros of first peræopod is of remarkable length as compared to carpus. If these drawings are camera-drawn and really correct, it may be doubted if it is the same species as that of M. Chevreux.

[For comparison with the foregoing species, which is new to the British fauna, and to clear up some doubtful points, we add here an account of the other European species of the genus.

[*LEPTOCHEIRUS PILOSUS*, Zaddach.

1844. *Leptocheirus pilosus*, Zaddach, Syn. Crust. Prussic. prod. p. 8.
 1862. *Protomedeia hirsutinana*, Bate & Westwood, vol. i. p. 298.
 1869. *Protomedeia hirsutinana*, Norman, "Last Report Dredging Shetland," Brit. Assoc. Rep. for 1868, p. 284.
 1870. *Boeckia typica*, A. W. Malm, Öfvers. Kong. Vet.-Akad. Förhand. p. 543, pl. v. figs. 1 a-g.
 1894. *Leptocheirus pilosus*, G. O. Sars, p. 555, pl. cxvii.

The largest of the European species; distinguished from the last not only by the smoothness of the back of the segments of the urosome (as are also the two following species), but also by the many-jointed (about 5 articulations) appendages of the antennules; by the bifid character of the nail of the last peræopods; the extreme massiveness of the uropods furnished with remarkably strong spines; and the character of the last uropods. The finger of the second gnathopods in this and in *L. guttatus* is nail-formed; but in the two following species it is styliform, and tipped at the extremity with setæ. Length 7 mm.

[*LEPTOCHEIRUS PECTINATUS* (Norman). (Pl. IX. figs. 1-3.)

1869. *Protomedeia pectinata*, Norman, "Last Report Dredging Shetland," Brit. Assoc. Rep. for 1868, p. 283.
 1895. *Leptocheirus pilosus*, A. O. Walker, Trans. Liverpool Biol. Soc. vol. ix. p. 310.
 1900. *Leptocheirus pilosus*, Chevreux, Résult. Campag. sci. Prince de Monaco, Fasc. xvi. Amphip. provenant des Campagnes de 'l'Hirondelle,' p. 90, pl. xi. fig. 2.

The passages in inverted commas in the following account are taken from A. M. N.'s original description.

The accessory appendage of the antennules (fig. 1) scarcely equals the first joint of the flagellum in length; it consists of only two joints. The first gnathopods have coxa, or epimeral part, rounded below (and not produced to a point) (fig. 2); "the propodos is oblong, subparallel-sided, twice as long as broad, distally truncate; the finger is strong, much longer than the truncated extremity of the propodos . . . furnished with a single large spine on the inner edge near the apex," the inner edge of the finger is also microscopically serrated. "Second gnathopods having the basos long (equal in length to four succeeding joints),

posteriorly straight, anteriorly convex, and furnished with two rows (one on the edge and the other a little within it) of very long slender setæ, arranged in comb-like manner; ischium and meros narrower than carpus; carpus narrow, only slightly widening distally; propodos tapering from base to distal extremity, both margins fringed with long setæ, those of the anterior side the longer; finger very long, of equal thickness throughout, more than half as long as propodos, not unguiculate nor capable of being bent back upon the propodos; the blunt distal extremity terminated by two or three setæ."

Mr. Walker and M. Chevreux are of opinion that this is the *L. pilosus* of Zaddach. Future observation must finally determine the point. The specimen examined by Zaddach was very small, only about 3 mm. If the specimen was the young of *L. hirsutimanus*, as Sars takes it to have been, the massive development of the uropods would not have been assumed, and this would account for that character not having been noticed by the author. A question of distribution also comes in: we know that *L. hirsutimanus* occurs in the Baltic, but *L. pectinatus* has not as yet been found north of the British Isles.

Length 2.5 mm.

[*LEPTOCHEIRUS FASCIATUS* (A. Costa). (Pl. V. figs. 11, 12.)

1864. *Protomedeia fasciata*, A. Costa, "Di due nuove specie di Crostacei Amphipodi del Golfo di Napoli," Ann. del Mus. Zool. della R. Univers. di Napoli, Anno ii. p. 155, pl. ii. fig. 8 (*fide* Chevreux).

1893. *Leptocheirus pilosus*, Della Valle, p. 427, pl. xii. figs. 1-14.

1899. *Leptocheirus Dellavallei*, Stebbing, Ann. & Mag. Nat. Hist. ser. 7, vol. iii. p. 350.

1900. *Leptocheirus fasciatus*, Chevreux, Résultats Campag. sci. Prince de Monaco, Fasc. xvi. Amphip. de 'l'Irondelle,' p. 91 (note).

The Mediterranean species is not known to the British fauna, but approaches so nearly to *L. pectinatus* that it may be useful to call attention to the points of difference. We are indebted to Prof. Della Valle and M. Chevreux for specimens, and we figure the first gnathopod. On the authority of the latter it is here called *Leptocheirus fasciatus* (A. Costa).

The first gnathopod has the coxa (fig. 11 a) produced to a point; the hand is fully three times as long as broad, the palm at the extremity of the joint is boldly convex and microscopically serrulated (fig. 12); the finger far exceeds

the palm in length, bears two spines on its inner edge which is microscopically serrulated. The second gnathopod is nearly as in the last species; the finger not unguiculate, long, feeble in character, and terminating in setæ. The last uropods are of unusual length for the genus; the branches equal in length and similar in character, having lateral and terminal slender spines. The lateral spines of the second uropods are also slender. Length 5 mm.

Distinguished from *L. pectinatus* chiefly by the coxa and other parts of the first gnathopods, and by the structure of the uropods.]

Fam. 23. PHOTIDÆ.

GAMMAROPSIS MACULATA (Johnston).

1828. *Gammarus maculatus*, Johnston, "Contrib. to British Fauna," Zool. Journal, vol. iii. p. 176.

1854. *Gammarus* (*Gammaropsis*) *erythrophthalmus*, Lilljeborg, K. Svenska Vet.-Akad. Handl. p. 455.

1862. *Eurystheus erythrophthalmus*, Bate & Westwood, vol. i. p. 354, ♂.

1862. *Eurystheus bispinimanus*, Bate & Westwood, vol. i. p. 357, ♀.

Ilfracombe, Exmouth, Dartmouth, Plymouth, where it is very common; Falmouth (A. M. N.).

MEGAMPHOPUS CORNUTUS, Norman.

1869. *Megamphopus cornutus*, Norman, "Last Report Dredging Shetland," Brit. Assoc. Report for 1868, p. 282.

1876. *Protomedea longimana*, Boeck, p. 578, pl. xxv. fig. 4; pl. xxix. fig. 5.

1878. *Podocerospis intermedia*, Stebbing, "Two new species of Amphipodous Crustacea," Ann. & Mag. Nat. Hist. ser. 5, vol. ii. p. 367, pl. xv. figs. 3-3f.

1894. *Megamphopus cornutus*, Sars, p. 564, pl. cc.

Torquay (Stebbing); Exmouth and Scilly Isles (A. M. N.).

MICROPROTOPUS MACULATUS, Norman.

1867. *Microprotopus maculatus*, Norman, Brit. Assoc. Report for 1866, p. 203.

1868. *Microprotopus maculatus*, Norman, "Crust. Amphip. new to Science or to Britain," Ann. & Mag. Nat. Hist. ser. 4, vol. ii. p. 419, pl. xxiii. figs. 7-11.

1874. *Microprotopus maculatus*, Stebbing, Ann. & Mag. Nat. Hist. ser. 4, vol. xiv. p. 43, pl. ii. figs. 5-5b.

1876. *Microprotopus maculatus*, Boeck, p. 559, pl. xxvi. fig. 3.

1879. *Orthopalame Terschellingi*, Hoek, "Carcinologisches," Tijdschr. d. Ned. Dierk. Vereen. iv. p. 123, pl. ix. figs. 4-7.

1890. *Microprotopus maculatus*, Chevreux, Bull. Soc. Zool. France, xv. p. 148, and woodcuts.

1893. *Microprotopus maculatus*, Della Valle, p. 393, pl. lvi. figs. 13-16.

1894. *Microprotopus maculatus*, Sars, p. 567, pl. cci.

Torbay (*Stebbing*); Exmouth, Teignmouth Bay, Plymouth, Fowey, Falmouth, and Scilly Isles (*A. M. N.*).

PHOTIS LONGICAUDATA (Bate & Westwood).

1862. *Eiscladus longicaudatus*, Bate & Westwood, vol. i. p. 412.

1870. *Photis Lütkeni*, Boeck, "Crust. Amphip. bor. et arctica," Vid. Selsk. Forhand. p. 153.

1893. *Photis Reinhardti*, Della Valle, p. 395, pl. iii. fig. 3, pl. x. figs. 1-19.

1894. *Photis longicaudata*, Sars, p. 571, pl. ccii. fig. 1.

Torbay (*Stebbing*); Exmouth, Start Bay, Salcombe, and Plymouth (*A. M. N.*).

PODOCEROPSIS EXCAVATA (Bate).

1862. *Amphithoe albomaculata*, Bate & Westwood (*nec* Kröyer), vol. i. p. 426.

1863. *Nenia excavata*, Bate & Westwood, vol. i. p. 476, ♀.

1863. *Nenia rimapalmata*, Bate & Westwood, vol. i. p. 474, ♂.

1894. *Podoceropsis excavata*, Sars, p. 576, pl. ccv.

Torbay (*Stebbing*); Start Bay (*A. M. N.*).

PODOCEROPSIS SOPHIÆ, Boeck.

1860. *Podoceropsis Sophiæ*, Boeck, Forhand. ved de Skand. Naturf., 8 Møde, p. 666.

1863. *Nenia tuberculosa*, Bate & Westwood, vol. i. p. 472, ♂.

1863. *Nenia undata*, Bate & Westwood, vol. i. p. 477, ♀.

1894. *Podoceropsis Sophiæ*, Sars, p. 574, pl. cciv.

A single specimen in Start Bay, in 7 fathoms (*A. M. N.*).

Fam. 24. AMPHITHOIDÆ.

AMPHITHOE RUBRICATA (Montagu).

1862. *Amphithoe rubricata*, Bate & Westwood, vol. i. p. 418.

1862. *Amphithoe littorina*, Bate & Westwood, vol. i. p. 422, ♂.

1894. *Amphithoe rubricata*, Sars, p. 579, pl. ccvi.

It is *Amphithoe albomaculata*, Kröyer, and *A. podoceroides*, Rathke.

Common between tide-marks.

PLEONEXES GAMMAROIDES, Bate.

1857. *Pleonexes gammaroides*, Bate, Ann. & Mag. Nat. Hist. ser. 2, vol. xix. p. 147.

1862. *Amphithoe gammaroides*, Bate & Westwood, vol. i. p. 427, ♂.

1862. *Sumamphithoe hamulus*, Bate & Westwood, vol. i. p. 430, ♀.

1874. *Sunamphithoe gammaroides*, Stebbing, "On some species of *Amphithoe* and *Sunamphithoe*," Ann. & Mag. Nat. Hist. ser. 4, vol. xiv. p. 114, pl. xi. fig. 3, and pl. xii. figs. 3-3*f*.
 1876. *Sunamphithoe longicornis*, Boeck, p. 596, pl. xxvii. fig. 2, ♂.
 1894. *Pleonexes gammaroides*, Sars, p. 382, pl. cci.

Torquay and Salcombe (*Stebbing*); Mewstone, tide-marks, and Falmouth (*A. M. N.*).

SUNAMPHITHOE PELAGICA (H. Milne-Edwards).

1830. *Amphithoe pelagica*, H. Milne-Edwards, Ann. des Sci. Nat. vol. xx. p. 378.
 1840. *Amphithoe Gaudichaudi*, H. Milne-Edwards, Hist. Nat. des Crust. vol. iii. p. 31, ♀.
 1840. *Amphithoe pelagica*, id. ibid. p. 36, ♂.
 1845. *Amphithoe pelagica*, Goodsir, "Descr. Animals found amongst the Gulf-weed," Ann. & Mag. Nat. Hist. vol. xv. p. 75, pl. vii. fig. 4.
 1852. *Amphithoe orientalis*, Dana, U.S. Expl. Exped., Crustacea, vol. xiii. pt. 2, p. 937, pl. lxiv. fig. 2.
 1857. *Sunamphithoe conformata*, Bate, Ann. & Mag. Nat. Hist. ser. 2, vol. xix. p. 148, ♂.
 1860. *Amphithoe grandimana*, Boeck, Forhand. Skand. Naturf. i Kjöbenhavn, 8 Möde, p. 608.
 1874. *Sunamphithoe conformata*, Stebbing, Ann. & Mag. Nat. Hist. ser. 4, vol. xiv. p. 116, pl. xii. figs. 4-4*d*, ♂ ♀.
 1894. *Sunamphithoe conformata*, G. O. Sars, p. 585, pl. ccviii.
 1900. *Sunamphithoe pelagica*, Chevreux, Résultats Camp. sci. par Prince de Monaco, Fasc. xvi. Amphipodes provenant des Campagnes de 'l'Irondelle,' p. 102, pl. xi. fig. 4.

M. Chevreux has established the interesting fact that the Amphipod which has been several times described as living among the Gulf-weed of the Sargasso Sea, is the same as the *Sunamphithoe conformata* of our shores (*vide* Chevreux, *l. c.*).

Taken in Torbay and at Salcombe by Stebbing and A. M. N., and also at Plymouth by the latter.

BIANCOLINA CUNICULUS (Stebbing).

1874. *Amphithoe cuniculus*, Stebbing, "On some species of *Amphithoe* and *Sunamphithoe*," Ann. & Mag. Nat. Hist. ser. 4, vol. xiv. p. 112, pl. xi. figs. 1-1*e*, ♂.
 1893. *Biancolina algicola*, Della Valle, p. 562, pl. iii. fig. 11; pl. xxxii. figs. 38-53, ♀.

We adopt this synonymy in deference to Stebbing's views (Ann. & Mag. Nat. Hist. ser. 7, vol. iii., April 1899).

"Taken in rock-pools at Meadfoot, Torquay, and at Prawle Point" (*Stebbing*).

Fam. 25. JASSIDÆ.

*BRUZELIELLA FALCATA (Montagu).

Synonyms are *Cancer Gammarus falcatus*, Montagu, and *Podocerus falcatus*, Bate, ♂ junior; the nail of the second gnathopod in Montagu's figure being abnormal. *Jassa pulchella* of Leach, and *Podocerus pulchellus*, Bate, the adult ♂; *Podocerus pelagicus*, Bate, ♀.

Good illustrations of the second gnathopods in ♂ and ♀ at different ages are given by Nebeski (Beitr. z. Kennt. d. Amphip. der Adria, 1880, pl. iv.).

The tooth on the nail in Montagu's figure of *falcatus* is an occasional outgrowth. Walker says that he has in his collection an adult *Jassa falcata*, 10 mm. long, which has such a tooth on the dactylus, and we have ourselves such specimens; while a swelling in that part of the dactylus, where the tooth occasionally appears, is by no means uncommon. The *Podocerus Herdmani*, Walker = *P. odontonyx*, Sars, judging from the small size of these males, probably represents the same condition in *B. pusilla*, and we have that condition (taken with normal form) from Shetland. The fullest developed gnathopod of *Microjassa cumbrensis* figured by Stebbing (Trans. Zool. Soc. vol. xiii. pl. vi. B. fig. gn. 2 A) shows a tubercle on the nail, and this seems to be the general form in adult males of *M. cumbrensis*; but the absence of the tubercle is not uncommon in this species, while the nail in one of our specimens has two such tubercles (see also Walker, Ann. & Mag. Nat. Hist. ser. 7, vol. iii. p. 394).

For remarks on the genus *Podocerus*, see further on under *Platophium*.

Ilfracombe, Exmouth, Starcross, Plymouth, Falmouth, Scilly Isles. In 1884 immense numbers were found on a buoy which had been taken up at Falmouth. Among these were examples of males with the toothed nail; they in other respects entirely agreed with the normal form, and were at the time regarded as of no special interest.

BRUZELIELLA PUSILLA (G. O. Sars).

1863. *Podocerus variegatus* (nec Leach), Bate & Westwood, vol. i. p. 439, ♀.

1894. *Podocerus pusillus*, Sars, p. 596, pl. ccxii. fig. 1, ♂ ♀.

The figures of *Podocerus variegatus* of Bate (not Leach) seem to have been drawn from the female of *B. pusilla*. The main figure, as well as the details, clearly show that it has nothing to do with *Jassa pelagica* to which Boeck assigned it.

* For this genus, see under *Jassa pelagica*.

The second gnathopod of the female in this species is distinguished by its deeply and evenly concave palm, and by the finger which, extending beyond the palm, closes on the side of the hand in the middle of several short stumpy spines.

Two females taken at Falmouth in 1884 (*A. M. N.*).

BRUZELIELLA OCIA (Bate).

1863. *Podocerus ocius*, Bate & Westwood, vol. i. p. 450.

This species is unknown to us. Chevreux gives the following as synonyms:—(1) *Podocerus dentex*, Czerniavsky, *Materialia ad Zoogr. Pont. comparatum*, 1868, p. 100, pl. vi. fig. 35; (2) *Podocerus ocius*, Nebeski, "Beit. z. Kennt. d. Amphip. der Adria," *Arb. Zool. Inst. Wien*, vol. iii. 1880, p. 154, pl. xiii. fig. 43; and (3) Della Valle, p. 448, pl. xiv. figs. 11–27. The figures given by Nebeski and Della Valle show that the specimen figured by Bate and Westwood is a female, though the illustrations of the second gnathopod in the two sexes make it clear that the sexual differences in this limb are much less marked than is usually the case in this genus. The fact that *B. ocia* is known in the most distant parts of the Mediterranean basin, and has only been extremely rarely found on the south and west coasts of Britain, while it is unknown further north, tends to show that it is an essentially southern form.

The type specimen described by Bate was taken by Mr. Gosse near low-water mark at Ilfracombe.

MICROJASSA CUMBRENSIS (Stebbing & Robertson).

1891. *Podocerus cumbrensis*, Stebbing & Robertson, "Four new British Amphipoda," *Trans. Zool. Soc. London*, vol. xiii. p. 38, pl. vi. B.

1899. *Microjassa cumbrensis*, Stebbing, *Ann. & Mag. Nat. Hist.* ser. 7, vol. iii. p. 240.

Plymouth, abundant; Scilly Isles (*A. M. N.*).

JASSA PELAGICA, Leach.

1813–1814. *Jassa pelagica*, Leach, *Trans. Linn. Soc.* vol. xi. p. 361.

1836–49. *Jassa pelagica*, H. Milne-Edwards, *Cuvier's Règne Animal* (Edit. Crochard), *Crustacés*, pl. lxi. fig. 2.

1843. *Podocerus capillatus*, Rathke, *Beitr. z. Fauna Norwegens*, p. 89, pl. iv. fig. 8.

1859. *Jassa capillata*, Bruzelius, *Bid. till kann. om Skand. Amphip. Gammaridea*, p. 19.

1863. *Podocerus capillatus*, Bate & Westwood, vol. i. p. 442.

1877. *Janassa variegata*, Boeck, *De Skand. og Arktiske Amphipoder*, p. 608, pl. xxviii. fig. 1, pl. xxix. fig. 2.

1894. *Jassa capillata*, Sars, p. 599, pl. cxxiv.

1899. *Parajassa pelagica*, Stebbing, *Ann. & Mag. Nat. Hist.* ser. 7, vol. iii. p. 240.

Mr. A. O. Walker re-examined the types of *Jassa pelagica* in the British Museum, and A. M. N. has satisfied himself by the same means, and found them to be this species; a conclusion, moreover, which is borne out by the figure which Milne-Edwards gave of one of these same type specimens. Bruzelius restricted the name *Jassa* to this species, and to, as he thought, a second one, the *Podocerus capillatus* of Rathke, with the character that the upper antennæ were without accessory appendage*; at the same time he removed the *Jassa* which had an accessory appendage into the genus *Podocerus*. This last usage of *Podocerus* has been generally followed, but cannot be used now (see observations further on under *Platophium*). But Bruzelius having been the author who restricted the genus *Jassa*, his application of the name must be retained, while another name must be given for the *Jassa pulchella*, Leach, which Bruzelius rejected from the genus. Under these circumstances, *Parajassa* suggested by Stebbing for the present species must become a synonym of *Jassa*; and we have thus found it necessary to give a new name, *Bruzeliella*, for the species which Bruzelius rejected from, but which Stebbing proposed to retain in, the genus *Jassa*.

Of course all this has nothing to do with what Bate and Westwood called *Podocerus pelagicus*, which we have before seen is *Bruzeliella falcata*, ♀.

Bate obtained *Jassa pelagica* from trawlers off Plymouth, and also had it sent to him, with their nests built in *Plumularia*, from Polperro by Laughrin.

ERICHTHONIUS DIFFORMIS (H. Milne-Edwards).

1863. *Dercythoe difformis*, Bate & Westwood, vol. i. p. 461, ♀.

This is *Cerapus longimanus* of Boeck.

Plymouth (A. M. N.).

ERICHTHONIUS ABDITUS (Templeton).

This is *Erichthonius bidens* of Costa, and *E. difformis* of Della Valle. *Dercythoe punctatus* of Milne-Edwards and Bate has been by Sars ascribed to the female of this species. In 1868, A. M. N. made it that sex of *E. difformis*, and it perhaps might belong to either, but the form of the head suggests the latter.

Torbay (*Stebbing*); Exmouth, Teignmouth Bay, Salcombe, Plymouth (abundant), Polperre (A. M. N.).

* There is a secondary appendage, but so microscopic that it is not easily detected (see Sars, pl. cexiv. figs. *a* 1¹* and *acc.app.*).

Fam. 26. COROPHIIDÆ.

SIPHONÆCETES WHITEI (Gosse).

1853. *Cerapus Whitei*, Gosse, Naturalist's Rambles on Devonshire Coast, p. 282, pl. xxii. figs. 12-14; and 1855, Manual Marine Zoology, pt. i. p. 140, fig. 253.
1857. *Cerapus Whitei*, Adam White, Popular Hist. Brit. Crust. p. 191.
1863. *Siphonæcetes typicus*, Bate & Westwood (not Kröyer), vol. i. p. 465.
1863. *Siphonæcetes Whitei*, Bate & Westwood, vol. i. p. 467.
1870. *Siphonæcetes Colletti*, Boeck, p. 178; and 1876, p. 663, pl. xxviii. fig. 9.
1875. *Siphonæcetes mucronatus*, Metzger, Jahresb. Komm. wiss. Unters. deutschen Meere in Kiel, pp. 278 & 297.
1893. *Siphonæcetes typicus*, Della Valle, p. 358, pl. iv. figs. 11-13, and pl. vii. figs. 23-38.
1894. *Siphonæcetes Colletti*, Sars, p. 610, pl. ccxviii. fig. 1.
1899. *Siphonæcetes Dellavallei*, Stebbing, Ann. & Mag. Nat. Hist. ser. 7, vol. iii. p. 211.

Exmouth, Salcombe, Dartmouth, Whitsand Bay (*A. M. N.*).

COROPHIUM VOLUTATOR (Pallas).

1766. *Oniscus volutator*, Pallas, Miscellanea Zoologica, p. 102, pl. xiv. fig. 20.
1767. *Cancer grossipes*, Linn. Syst. Nat. edit. xii. tom. i. pt. 2 (1767 date of this part), p. 1055.

This is *Corophium longirostre*, Latreille, and Bate & Westwood.

Barnstaple (*A. M. N.*) ; Salcombe Estuary (*R. A. Todd*, vi. p. 325) ; Plymouth (*Garstang*, ii. p. 337). Bate speaks of having "taken several specimens amongst weed attached to a buoy in Plymouth Sound, associated with *Podocerus*." The habitat given is that of the next and not of this species.

COROPHIUM BONELLII, H. Milne-Edwards.

1830. *Corophium Bonellii*, H. Milne-Edwards, "Recher. pour servir à hist. nat. des Crust. Amphip.," Ann. Sci. Nat. vol. xx. p. 385, and Hist. Nat. des Crust. vol. iii. p. 67.
1894. *Corophium Bonellii*, Sars, p. 616, pl. ccxxi. fig. 1.

This is not *C. spinicorne*, Bate, Brit. Mus. Cat. Amphip. p. 281, pl. xlvii. fig. 5, which, together with most of the figures illustrating what Bate and Westwood call *C. Bonellii*, vol. i. p. 497, represent the female of *C. crassicorne*, Bruzelius. This was stated by Norman so long ago as 1868 ("Last Dredging Report Shetland," Brit. Assoc. Rep. for 1868, 1869, p. 286), but it does not represent the whole truth ; for

the two chief figures in 'Brit. Sessile-Eyed Crustacea' represent another species, the side view has been altered as regards the lower antenna from the figure in the Brit. Mus. Cat., and that antenna and the segmented urosome on the figure of the animal as viewed from above would seem to have been taken from a female specimen of *Corophium affine* of Bruzelius.

Bate records "*C. spinicorne*" from Plymouth, but it is uncertain what species he really meant, and *C. crassicorne* is not included in the present catalogue as belonging to the Devon and Cornwall fauna. Other naturalists have recorded *C. crassicorne*, but from the confusion which has existed, we think it better that the records should be confirmed. The females of *C. crassicorne* and *C. Bonellii* are much alike in many respects, and both have the segments of the urosome coalesced; the chief distinctions are in the characters of the two pairs of antennæ.

Corophium Bonellii is extremely abundant at Plymouth, and, unless our memory fails us, especially on the stony ground of Millbay. We can fully bear out the statement of Sars as to the remarkable similarity in the sexes of this species. Among some hundreds of specimens loosely examined there were none which at a glance would seem to be males; but we have not gone through them critically.

UNCIOLA CRENATIPALMA (Bate).

1855. *Unciola irrorata*, Gosse (nec Say), "New and little-known Marine Animals," Ann. & Mag. Nat. Hist. ser. 2, vol. xvi. p. 307, and Marine Zoology, vol. i. p. 141, fig. 256.

1863. *Dryope crenatipalma*, Bate, Cat. Amphip. Brit. Mus. p. 277, pl. xlvii. fig. 2.

1863. *Dryope crenatipalmata*, Bate & Westwood, vol. i. p. 490, ♀.

1863. *Dryope irrorata*, iid. ibid. p. 488, ♂.

1889. *Unciola crenatipalmata*, J. Bonnier, "Les Amphipodes du Boulonnais, I.," Bull. Sci. de France et Belgium, vol. xx. p. 229, pls. xii., xiii., ♂ ♀.

1893. *Unciola crenatipalmata*, Della Valle, p. 340, pl. lv. figs. 32-36.

Dredged near Pope's Nose, Torquay (*Stebbing*); plentiful off Plymouth "among shells and stones on a muddy bottom at a depth of twenty fathoms" (*Garstang*, ii. p. 337, and iii. p. 119).

Fam. 27. COLOMASTIGIDÆ.

COLOMASTIX PUSILLA, Grube.

1861. *Colomastix pusilla*, Grube, Ein Ausflug nach Triest und dem Quarnero, p. 137.

1862. *Cratippus tenuipes*, Bate, Cat. Amphip. Brit. Mus. p. 276, pl. xlv. fig. 10.

1863. *Cratippus tenuipes*, Bate & Westwood, vol. i. p. 485.
 1866. *Cratippus crassimanus*, Heller, Beitr. z. näh. Kennt. des Amphip. des Adriat. Meeres, p. 50, pl. iv. figs. 12, 13.
 1869. *Exunguia stilipes*, Norman, in "Notes of a Week's Dredging in the West of Ireland," Ann. & Mag. Nat. Hist. ser. 4, vol. iii. p. 359, pl. xxii. figs. 7-12.
 1876. *Cratippus tenuipes*, Stebbing, "Some new and little-known Amphipods," Ann. & Mag. Nat. Hist. ser. 4, vol. xviii. p. 444, pl. xx. fig. 4.
 1893. *Colomastir pusilla*, J. Bonnier, "Les Amphipodes du Boulonnais," Bull. Sci. de France et Belgium, vol. xxiv. p. 203, pl. viii. figs. 1-11.

Torquay (*Stebbing*) ; Plymouth and Falmouth (*A. M. N.*).

Fam. 28. CHELURIDÆ.

CHELURA TEREBRANS, Philippi.

Torquay (*Stebbing*). Salcombe; near Duke Buoy, Plymouth; Falmouth (*A. M. N.*).

Fam. 29. DULICHIIDÆ.

DULICHIA PORRECTA, Bate.

Ilfracombe (*A. M. N.*).

DULICHIA FALCATA, Bate.

Ilfracombe (*A. M. N.*).

PLATOPHIUM DARWINII (Bate).

1860. *Cyrtophium Darwinii*, Bate, Report Brit. Assoc. 1859, p. 59.
 1863. *Cyrtophium Darwinii*, Bate & Westwood, vol. i. p. 481.
 1866. *Cyrtophium læve*, Heller, Beitr. z. näh. Kennt. des Amphip. des Adriatischen Meeres, p. 49, pl. iv. figs. 9-11.
 1888. *Platophium Darwinii*, Stebbing, Report 'Challenger' Crust. p. 292.
 1893. *Platophium brasiliense*, Della Valle, p. 329, pl. ii. fig. 7, pl. vii. figs. 39-58.
 1899. *Podocerus variegatus* (Leach *partim*), Stebbing, Ann. & Mag. Nat. Hist. ser. 7, vol. iii. p. 239 & p. 350.

One of the specimens named by Leach *Podocerus variegatus* in the British Museum is figured by H. Milne-Edwards, 'Règne Animal,' pl. lxi. fig. 4, but both description and figure are wholly inadequate; and Leach did not know his own species, for mixed with this specimen figured by Milne-Edwards, which is *Platophium Darwinii*, are others which belong to *Bruzeliella falcata*. If *Podocerus* is retained in use

at all, it should in our opinion be in the sense in which it has been employed by carcinologists up to the present time. To use it instead of *Platophium* would be unjust towards the author of that genus, and its altered use would lead to endless confusion. The right course appears to be to let the name of the insufficiently described *Podocerus variegatus* henceforth sink into oblivion. Moreover, it seems very desirable that a law of nomenclature should be enacted whereby a generic name which has been employed in one sense for, say, fifty years, should not be transferred to an entirely different genus. In this particular case no delicacy need be felt towards Leach, for perhaps no other author so wilfully renamed species which were already described, and with brazen face quietly placed below his own name the rejected earlier name as a synonym.

Torquay (*Stebbing*, in *Mus. Nor.*).

Tribe III. CAPRELLIDEA.

Fam. CAPRELLIDÆ.

PHTISICA MARINA, Slabber.

This is *Proto pedata*, Bate & Westw., ♀; *Proto Goodsiri*, B. & W., ♂.

Exmouth, Salcombe, Plymouth, Polperro, Falmouth (*A. M. N.*).

PSEUDOPROTELLA PHASMA (Montagu).

1890. *Pseudoprotella phasma*, P. Mayer, Caprelliden des Golfes von Neapel, &c., Nachtrag, p. 19, pl. i. figs. 12-18, pl. iii. figs. 21-25, pl. v. fig. 14, pl. vi. fig. 5.

1903. *Pseudoprotella phasma*, P. Mayer, Die Caprellidæ des Siboga-Expeditie, p. 37.

Salcombe, Plymouth (*A. M. N.*).

PERIAMBUS TYPICUS (Kröyer).

This, which is *Caprella typica*, B. & W., has been taken at Exmouth, Fowey, Plymouth, and Falmouth (*A. M. N.*).

CAPRELLA LINEARIS (Linné).

C. lobata, B. & W., is the adult male of this species.
Ilfracombe, Plymouth, Polperro (*A. M. N.*).

CAPRELLA ÆQUILIBRA, Say.

Plymouth. A fine lot of this species has been taken at the Plymouth Biol. Lab., and it was at Plymouth that Bate took the type specimen amongst weeds attached to one of the buoys. It is *C. Esmarki*, Boeck, and *C. monacantha* of Heller.

[“CAPRELLA HYSTRIX, Bate.”]

This is regarded by Mayer (and we agree) to be a form of *C. septentrionalis*, Kröyer. The specimens which Bate mentions as sent for examination by A. M. N. were not from Northumberland, as he states, but from Shetland *. It is a northern form, and there is probably some mistake in the Plymouth record which Bate gives.]

CAPRELLA TUBERCULATA, Guérin.

Plymouth and Polperro (*A. M. N.*). In Mounts Bay, in Gwavas Lake, and off St. Michael's Mount (*R. Q. Couch*).

CAPRELLA ACANTHIFERA, Leach.

Exmouth, mouth of the Yealm, Polperro, Fowey, Falmouth, and specimens from Starcross and Falmouth which belong to the variety *levissima*, Mayer (*A. M. N.*); Plymouth (*Bate*).

CAPRELLA FRETENSIS, Stebbing.

1878. *Caprella fretensis*, Stebbing, “Notes on Sessile-Eyed Crustaceans,” Ann. & Mag. Nat. Hist. ser. 5, vol. i. p. 31, pl. v. figs. 1-1 p.

1890. *Caprella fretensis*, Mayer, Caprelliden des Golfes von Neapel, Nachtrag, p. 62, pl. i. figs. 38, 39, pl. v. figs. 41, 42.

1903. *Caprella fretensis*, Mayer, Die Caprellidæ der Siboga-Expedition, p. 102.

Ilfracombe and Salcombe (*Stebbing*); Torbay (*A. O. Walker*).

CAPRELLA ACUTIFRONS, Latreille.

Devonshire coast (*Leach*); Plymouth Sound (*Mr. Boswarva*). Not uncommon among Corallines in Mounts Bay (*R. Q. Couch*); Ilfracombe and Exmouth (*A. M. N.*).

* There are other cases in which wrong localities are given by Bate for A. M. N.'s specimens, but they were all properly labelled before sending to him.

Subclass III. *ENTOMOSTRACA*.Order IX. **BRANCHIOPODA.**Suborder I. **Phyllocarida.**Fam. **NEBALIIDÆ.****NEBALIA BIPES** (Fabricius).

1888. *Nebalia Geoffroyi*, Claus (C.), Organismus der Nebaliden und die systematische Stellung der Leptostraken, pp. 1-148, pls. i.-xv.

1896. *Nebalia bipes*, G. O. Sars, Fauna Norvegiæ: I. Phyllocarida og Phyllopoda, p. 9, pl. i. figs. 1-3, pls. ii. & iii., pl. iv. figs. 1-8, pl. v.

This species is also *Nebalia Herbstii* of Leach and *Nebalia Montagu* of J. V. Thompson. It is common on the south side of Devon and Cornwall, and no doubt, if looked for, would be found also on the northern coasts.

Suborder II. **Phyllopoda.**Fam. **BRANCHIOPODIDÆ.****CHIROCEPHALUS DIAPHANUS**, Prévost.

1850. *Chirocephalus diaphanus*, Baird, Nat. Hist. Brit. Entomostraca, p. 53, pls. iii.-v.

This species would appear to be far more abundant in Cornwall than elsewhere in the British Isles. Mr. Rupert Vallentin wrote to us, Feb. 4, 1905, as follows:—" *Chirocephalus diaphanus* has been found at Penryn, near Falmouth (Roy. Cornwall Polytech. Soc. Ann. Rep. 1891, 'Additions to the Fauna of Falmouth,' by R. Vallentin), also in several ponds in Newquay. A young friend of mine, now dead, found the species very abundant in several roadside ponds round Tintagel, and brought some specimens back for my inspection. Mr. W. Garstang told me that 'a gentleman many years ago secured some specimens of *Chirocephalus* in a roadside pond near Grampound Road.' Doubtless this species is to be found in many ponds and pools throughout this county. It is simply a question of looking for it at the right time of year, January to March." But though *Chirocephalus* is more abundant in the spring, it will reappear also in the autumn; for on Sept. 26, 1905, Mr. Vallentin found the *Chirocephalus* in a roadside pond between Guinear Road Station and Helston, and kindly sent us two female specimens, which exceeded in size any which we had previously seen.

A week later, Oct. 4, Mr. Vallentin revisited the pond in the hope of obtaining further specimens, but without success, and he wrote: "All the Chirocephali had vanished from the roadside pond. I most carefully worked with my hand-net all over the pool, but not a single *Chirocephalus* could I find. On thinking this matter over, I imagine that a herd of cattle on their way to Helston Market—to-day being market day—had rushed through the pool and killed all the specimens. The little pond was about, say, 8 feet by 6 feet; the sides were trampled down, and there were numerous marks made by cattle." (*R. Vallentin in litt.*)

Suborder III. Cladocera.

The following works will be most frequently quoted in the account of this suborder:—

1850. BAIRD (W.).—Natural History of British Entomostraca.
 1867. NORMAN (A. M.) and BRADY (G. S.).—Monograph of the British Entomostraca belonging to the Families Bosminidæ, Macrothricidæ, and Lynceidæ. Nat. Hist. Trans. Northumb. and Durham, vol. i. pp. 354–400, pls. xviii.–xxiii.
 1900. LILLJEBORG (W.).—Cladocera Sueciæ.

Tribe I. CALYPTOMERA.

Fam. 1. SIDIIDÆ.

SIDA CRYSTALLINA (O. F. Müller).

Exeter Canal; River Otter (A. M. N.).

Fam. 2. DAPHNIDÆ.

DAPHNIA PULEX (de Geer).

Very common. Var. *obtusa*, P. E. Müller; St. Ives (*R. Vallentin*!).

DAPHNIA LONGISPINA (O. F. Müller).

1850. *Daphnia pulex*, var., Baird, pl. vii. figs. 3, 4.
 1895. *Daphnia longispina*, Th. Scott, Thirteenth Ann. Rep. Fish. Board Scotland, p. 190, pl. v. fig. 1.
 1898. *Daphnia longispina*, G. S. Brady, "British Species of Entomostraca belonging to *Daphnia* and allied genera," Nat. Hist. Trans. Northumberland, Durham, and Newcastle-upon-Tyne vol. xiii. p. 228, pl. viii. figs. 11–19.
 1900. *Daphnia longispina*, Lilljeborg, p. 94, pl. xii. fig. 14, pl. xiii. figs. 1–8, pl. xiv. figs. 1–9.

Sars has named eleven Norwegian varieties of this species ; of these *aquilina*, *caudata*, and *rosea* have been regarded by some authors as distinct species. It is also *D. paludicola* and *ventricosa* of Hellich, and *D. Hellichii* of Stengelin.

Slapton Lea, and large pond at Torcross ; lake at Tresco, Scilly Isles (*A. M. N.*) ; old well near St. Ives, and Looe Pool, near Penzance (*R. Vallentin*!).

SIMOSA VETULA (O. F. Müller).

1850. *Daphnia vetula*, Baird, p. 95, pl. x. figs. 1, 1 a.

1900. *Simocephalus vetulus*, Lilljeborg, p. 166, pl. xxiv. figs. 8-18, pl. xxv. figs. 1-7.

1903. *Simosa vetula*, Norman, "New Generic names for some Entomostraca and Cirripedia," Ann. & Mag. Nat. Hist. ser. 7, vol. xi. p. 367.

Even more common than *Daphnia pulex*. Norman, in the paper referred to, substituted the generic name *Simosa* for *Simocephalus*, Schödler (not of Günther, a genus of Snakes).

CERIODAPHNIA RETICULATA (Jurine).

1895. *Ceriodaphnia reticulata*, Th. Scott, Thirteenth Ann. Rep. Fish. Board Scotland, p. 255, pl. x. fig. 10.

1900. *Ceriodaphnia reticulata*, Lilljeborg, p. 184, pl. xxvii. figs. 1-10.

This is not *Daphnia reticulata*, Baird. Lilljeborg refers that author's pl. vii. fig. 5 to *Ceriodaphnia megalops* of Sars, and pl. xii. figs. 1, 2 to *Ceriodaphnia laticaudata* of P. E. Müller.

The present species is distinguished from all others of the genus by the caudal claws, which bear a series of small spines on their inner margin.

The Axe at Axminster (*A. M. N.*) ; ponds on the Lizard (*R. Vallentin*!).

CERIODAPHNIA LATICAUDATA, P. E. Müller.

1850. *Daphnia reticulata*, Baird, p. 97 (*partim*), pl. xii. figs. 1, 2.

1867. *Ceriodaphnia laticaudata*, P. E. Müller, "Danmarks Cladocera," Naturhist. Tidssk. ser. 3, vol. v. p. 130, pl. i. fig. 19.

1895. *Ceriodaphnia laticaudata*, Th. Scott, Thirteenth Ann. Rep. Fish. Board Scotland, p. 256, pl. x. figs. 11-14.

1900. *Ceriodaphnia laticaudata*, Lilljeborg, p. 298, pl. xxix. figs. 8-14.

A pond on the Lizard, Oct. 1905 (*R. Vallentin*!) ; Slapton Lea (*A. M. N.*).

CERIODAPHNIA PULCHELLA, G. O. Sars.

1862. *Ceriodaphnia pulchella*, G. O. Sars, "Om de i Omegnen af Christiania ferekommende Cladocerer" (Andet Bidrag), Vid.-Selsk. Forhand. Christiania, p. 276 (p. 28, separate copy).
 1867. *Ceriodaphnia pulchella*, P. E. Müller, "Danmarks Cladocera," Naturhist. Tidssk. ser. 3, vol. v. p. 128, pl. i. figs. 13, 14.
 1892. *Ceriodaphnia quadrangula*, Scourfield, Jour. Quekett Micros. Club, ser. 2, vol. v. p. 65, pl. iv. figs. 4-7.
 1900. *Ceriodaphnia pulchella*, Lilljeborg, p. 198, pl. xxviii. figs. 6-18.

Lake in Stover Park near Newton Abbott; pond at Kingsteignton; Exeter Canal; large pond at Torcross; lake at Tresco, Scilly Isles (*A. M. N.*).

SCAPHOLEBERIS MUCRONATA (O. F. Müller).

1850. *Daphnia mucronata*, Baird, p. 99, pl. x. figs. 2, 3.
 1894. *Scapholeberis mucronata*, Scourfield, Linn. Soc. Journ., Zoology, vol. xxv. p. 5, pl. i. figs. 1-5; pl. ii. figs. 1-3.
 1900. *Scapholeberis mucronata*, Lilljeborg, p. 151, pl. xxii. figs. 15-19, pl. xxiii. figs. 1-7.

Canal above Newton Abbott and lake in Stover Park; Exeter Canal (*A. M. N.*).

MOINA RECTIROSTRIS (Jurine).

1850. *Moina rectirostris*, Baird, p. 101, pl. xi. figs. 1, 2.
 1900. *Moina rectirostris*, Lilljeborg, p. 216, pl. xxix. figs. 23-30, pl. xxx. figs. 1-12.

A few specimens in a pond by the roadside between Guinear Road Station and Helston, but not the same pond in which *Chirocephalus* was taken, Oct. 1905 (*R. Vallentin*!).

Fam. 3. BOSMINIDÆ.

BOSMINA LONGIROSTRIS (O. F. Müller).

1850. *Bosmina longirostris*, Baird, p. 105, pl. xv. fig. 3.
 1867. *Bosmina longirostris*, Norman & Brady, p. 357, pl. xxii. fig. 4.
 1895. *Bosmina longirostris*, Th. Scott, Thirteenth Ann. Rep. Fish. Board Scotland, pl. x. figs. 22-25.
 1900. *Bosmina longirostris*, Lilljeborg, p. 125, pl. xxx. figs. 13-16, pl. xxxi. figs. 1-18, pl. xxxii. figs. 1-3.

Pond at Kingsteignton and Slapton Lea (*A. M. N.*).

Fam. 4. MACROTHRICIDÆ.

MACROTHRIX LATICORNIS (Jurine).

1850. *Macrothrix laticornis*, Baird, p. 103, pl. xv. fig. 2.
 1867. *Macrothrix laticornis*, Norman & Brady, p. 360, pl. xxiii. figs. 4, 5.
 1900. *Macrothrix laticornis*, Lilljeborg, p. 338, pl. liv. figs. 6-13.

Pond at Kingsteignton (*A. M. N.*).

ILYOCRYPTUS SORDIDUS (Liévin).

1863. *Acantholeberis sordida*, Norman, "On *Acantholeberis*, &c.,"
Ann. & Mag. Nat. Hist. ser. 3, vol. xi. p. 412, pl. xi. figs. 6-9.
1867. *Acantholeberis sordida*, Norman & Brady, p. 368.
1900. *Ilyocryptus sordidus*, Lilljeborg, p. 326, pl. lii. figs. 15-17,
pl. liii. figs. 1-8.

Pond at Kingsteignton near Newton Abbott (*A. M. N.*).

Fam. 5. CHYDORIDÆ.

EURYCERCUS LAMELLATUS (O. F. Müller).

1850. *Eurycercus lamellatus*, Baird, p. 124, pl. xv. figs. 1. 1 a-l.
1867. *Eurycercus lamellatus*, Norman & Brady, p. 401, pl. xx. fig. 8.
1900. *Eurycercus lamellatus*, Lilljeborg, p. 385, pl. lix. figs. 1-10,
pl. lx. figs. 1-10.

Pond at Sandypark; lake at Stover Park; Exeter Canal, Slapton Lea, and large pond at Torcross; the Axe at Axminster (*A. M. N.*). Ponds at the Lizard (*R. Vallentin*!).

ACROPERUS HARPÆ, Baird.

1850. *Acroperus harpæ*, Baird, p. 129, pl. xvi. fig. 5.
1867. *Lynceus harpæ*, Norman & Brady, p. 371, pl. xxi. fig. 1.
1900. *Acroperus harpæ*, Lilljeborg, p. 418, pl. lxiii. figs. 14-24,
pl. lxiv. figs. 1-10.

With the exception of *Chydorus sphaericus*, this seems to be the commonest species of Chydoridæ in Devon and Cornwall.

ALONA QUADRANGULARIS (O. F. Müller).

1850. *Alona quadrangularis*, Baird, p. 131, pl. xvi. fig. 4.
1867. *Lynceus quadrangularis*, Norman & Brady, p. 377, pl. xxi.
fig. 5.
1895. *Alona costata*, Th. Scott, Thirteenth Ann. Rep. Fish. Board
Scotland, p. 189, pl. v. figs. 2, 12.
1900. *Lynceus quadrangularis*, Lilljeborg, p. 448, pl. lxvi. figs. 8-17.

Exeter Canal, Sandypark, Kingsteignton, Broadmere Pond near Chagford, Torquay Reservoir; the Axe at Axminster; the Otter at Honiton; Slapton Lea; Grimspound on Dartmoor (*A. M. N.*). Ponds at the Lizard, near Helston, and at Mazarion (*R. Vallentin*!).

ALONA AFFINIS (F. Leydig).

1853. *Lynceus affinis*, F. Leydig, Naturgesch. d. Daphniden, p. 223,
pl. ix. figs. 68, 69.
1867. *Alona oblonga*, P. E. Müller, Danmarks Cladocera, p. 175,
pl. iii. figs. 22, 23, pl. iv. figs. 1, 2.

1895. *Alona quadrangularis*, Th. Scott, Thirteenth Ann. Rep. Fish. Board Scotland, p. 189, pl. v. figs. 3, 11, 25.
 1900. *Lynceus affinis*, Lilljeborg, p. 454, pl. lxvi. figs. 18-21, pl. lxvii. figs. 1-17, pl. lxviii. fig. 1.

Axe at Axminster ; lake in Stover Park ; pond at Kingsteignton : Exeter Canal ; Topsam Marshes (*A. M. N.*) ; Looe Pool near Penzance (*R. Vallentin!*).

ALONA COSTATA, G. O. Sars.

1862. *Alona costata*, G. O. Sars, "Om de i Omegnen af Christiania ferekommende Cladocerer" (Andet Bidrag), Vid.-Selsk. Forhand. Christiania, p. 38 (separate copy).
 1862. *Alona lineata*, Schödler, Lynceiden u. Polyphemiden d. Umgegend Berlin, p. 20, pl. i. fig. 23 ; and 1863, Neue Beitr. zur Naturgesch. d. Cladoceren, p. 20, pl. i. fig. 23.
 1867. *Lynceus costatus*, Norman & Brady, p. 379, pl. xviii. fig. 2, pl. xxi. fig. 7.
 1900. *Lynceus costatus*, Lilljeborg, p. 465, pl. lxviii. figs. 9-15.

Canal near Newton Abbott ; pond at Kingsteignton ; Topsam Marshes (*A. M. N.*).

ALONA GUTTATA, G. O. Sars.

1867. *Lynceus guttatus*, Norman & Brady, p. 380, pl. xviii. fig. 6, pl. xxi. fig. 10.
 1874. *Alona parvula*, Kurz, Dodekas neuer Cladoceren, &c. p. 44 (separate copy), pl. ii. fig. 8.
 1874. *Alona tuberculata*, id. *ibid.* p. 45, pl. ii. fig. 3.
 1895. *Alona guttata*, Th. Scott, Thirteenth Ann. Rep. Fish. Board Scotland, p. 190, pl. v. figs. 8, 21.
 1900. *Lynceus guttatus*, Lilljeborg, p. 468, pl. lxviii. figs. 16-26.

River Otter at Honiton (*A. M. N.*) ; pond at the Lizard (*R. Vallentin!*). The River Otter specimen was entirely devoid of surface-sculpture, as represented in Lilljeborg's figure 19, but the "*guttæ*" were well developed on the Lizard form.

ALONA RECTANGULA, G. O. Sars.

1861. *Alona rectangula*, G. O. Sars, "Om de i Omegnen af Christiania ferekommende Cladocerer," Vid.-Selsk. Forhand. Christiania, p. 18 (separate copy).
 1867. *Alona guttata*, P. E. Müller, Danmarks Cladocera, p. 181, pl. iv. figs. 8, 9.
 1869. *Alona intermedia*, P. E. Müller, "Efterskrift til Danmarks Cladocera," Naturhist. Tidssk. ser. 3, vol. v. p. 355.
 1874. *Alona coronata*, Kurz, Dodekas neuer Cladoceren &c., p. 48, pl. ii. figs. 4-6.
 1876. *Alona inornata*, Hudendorff, "Beitr. z. Kennt. Süßwasser-Cladoceren Russlands," Bull. Soc. Imp. Naturalistes de Moscou, p. 53, pl. ii. fig. 5.

1877. *Alona lineata*, Hellich, "Die Cladoceren Böhmens," p. 93, fig. 51 (separate copy).
 1890. *Alona pulchra*, Matile, "Cladoceren d. Umgegend v. Moscou," Bull. Soc. Imp. Naturalistes de Moscou, p. 149, pl. iv. fig. 36 (pp. 41 & 46 of separate copy).
 1895. *Alona neglecta*, Th. Scott, Thirteenth Ann. Rep. Fish. Board Scotland, p. 189, pl. v. figs. 4, 18.
 1900. *Lynceus rectangulus*, Lilljeborg, p. 476, pl. lxviii. figs. 30, 31, pl. lxix. figs. 1-6.

This species has been so little understood that we have given references to the first descriptions of the many species which Lilljeborg synonymises with it.

Exeter Canal ; Topsham Marshes (*A. M. N.*).

GRAPTOLEBERIS RETICULATA (Baird).

1843. *Alona reticulata*, Baird, Ann. & Mag. Nat. Hist. vol. ii. p. 93, pl. iii. fig. 12.
 1848. *Lynceus testudinarius*, S. Fischer, "Ueber die in d. Umgeb. v. St. Petersburg vorkom. Crust. aus d. Ordn. Branchiopoden u. Entomos.," Mém. Acad. Imp. St. Pétersb. d. Sav. étrangers, vol. vi. p. 191, pl. ix. fig. 12.
 1850. *Alona reticulata*, Baird, p. 132, pl. xvi. fig. 3.
 1867. *Lynceus testudinarius*, Norman & Brady, p. 381, pl. xviii. fig. 7, pl. xxi. fig. 4.
 1900. *Graptoleberis testudinaria*, Lilljeborg, p. 504, pl. lxxi. figs. 9-14, pl. lxxii. figs. 1-8.

Large pond at Starcross ; Slapton Lea ; Topsham Marshes ; the Axe at Axminster ; River Otter at Honiton (*A. M. N.*) ; pond on the Lizard (*R. Vallentin*, Oct. 1905 !).

ALONELLA EXCISA (S. Fischer).

1863. *Pleuroxus excisus*, Schödler, Neue Beiträge zur Naturgeschichte der Cladoceren, p. 49, pl. ii. fig. 38.
 1895. *Alonella exigua*, Th. Scott, Thirteenth Ann. Rep. Fish. Board Scotland, p. 190, pl. v. fig. 14.
 1900. *Alonella excisa*, Lilljeborg, p. 510, pl. lxxii. figs. 9-19.

Pond at Mazarion (*R. Vallentin*!).

ALONELLA EXIGUA (Lilljeborg).

1853. *Lynceus exiguus*, Lilljeborg, De Crust. ex ordinibus tribus Clad., Ostrac. et Copep. in Scania occurrentibus, p. 79, pl. vii. figs. 9, 10.
 1867. *Lynceus exiguus*, Norman & Brady, p. 384, pl. xviii. fig. 3, pl. xxi. fig. 3.
 1874. *Alonella exigua*, Kurz, Dodekas neuer Cladoceren &c., p. 58, pl. iii. fig. 6.
 1900. *Alonella exigua*, Lilljeborg, p. 513, pl. lxxii. figs. 20-26.

Exmoor at 1450 feet (*A. M. N.*).

ALONELLA NANA (Baird).

1850. *Acroperus nanus*, Baird, p. 130, pl. xvi. fig. 6.
 1861. *Alona pygmæa*, G. O. Sars, "Christiania ferekommende Cladocerer," Vid.-Selsk. Forhand. Christiania, p. 20 (separate copy).
 1863. *Pleuroxus transversus*, Schödler, Neue Beiträge zur Naturgesch. d. Cladoceren, p. 50, pl. iii. figs. 52, 53.
 1867. *Lynceus nanus*, Norman & Brady, p. 396, pl. xviii. fig. 8, pl. xxi. fig. 8.
 1900. *Alonella nana*, Lilljeborg, p. 517, pl. lxxii. figs. 27-31.

Small pond near Bennett's Cross, Dartmoor, in greater abundance than we have ever seen it elsewhere; canal near Newton Abbott; pond, Sandypark; Broadmere Pond near Chagford; Torquay Reservoir; River Otter; Topsham Marshes (*A. M. N.*).

PERACANTHA TRUNCATA (O. F. Müller).

1850. *Peracantha truncata*, Baird, p. 137, pl. xvi. fig. 1.
 1867. *Lynceus truncatus*, Norman & Brady, p. 387, pl. xxi. fig. 9.
 1900. *Peratacantha truncata*, Lilljeborg, p. 522, pl. lxxiii. figs. 1-20.

Lilljeborg has in his work substituted the more correct form *Peratacantha* for *Peracantha*, but such changes cannot be allowed, for they would lead to endless confusion; indeed, it would be impossible to give a classical form to a large proportion of generic names in use, and who cares about the derivation and meaning of the mass of them. Like Dick, Tom, or Harry, they represent to us living creatures to which we apply the name, and with which we associate the special characters.

Exeter Canal, lake in Stover Park, Kingsteignton (*A. M. N.*); pool near Mazarion (*R. Vallentin!*).

PLEUROXUS TRIGONELLUS (O. F. Müller).

1863. *Pleuroxus trigonellus*, Schödler, Neue Beiträge zur Naturgesch. d. Cladoceren, p. 44, pl. ii. figs. 33-36.
 1863. *Pleuroxus ornatus*, id. *ibid.* p. 47, pl. ii. fig. 32.
 1874. *Pleuroxus trigonellus*, Kurz, Dodekas neuer Cladoceren &c., p. 189, pl. iii. figs. 2, 5.
 1877. *Pleuroxus trigonellus*, Hellich, Die Cladoceren Böhmens, p. 103, fig. 60.
 1888. *Pleuroxus trigonellus*, Daday de Deés, Crust. Cladocer. Faunæ Hungariæ, p. 91, pl. i. figs. 34, 35.
 1900. *Pleuroxus trigonellus*, Lilljeborg, p. 534, pl. lxxiv. figs. 13-23.

Slapton Lea, Topsham Marshes (*A. M. N.*).

PLEUROXUS UNCINATUS, Baird.

1850. *Pleuroxus uncinatus*, Baird, p. 135, pl. xvii. fig. 4.
 1863. *Rhipophilus glaber*, Schödler, Neue Beiträge zur Naturgesch. d. Cladoceren, p. 55, pl. iii. figs. 54-56.

1863. *Rhipophilus uncinatus* and *personatus*, id. ibid. p. 56.
 1867. *Lynceus uncinatus*, Norman & Brady, p. 393, pl. xviii. fig. 9,
 pl. xix. fig. 6, pl. xxi. fig. 13.
 1900. *Pleuroxus uncinatus*, Lilljeborg, p. 537, pl. lxxv. figs. 1-10.

Canal near Newton Abbott, lake in Stover Park, the River
 Axe at Axmouth (A. M. N.).

PLEUROXUS ADUNCUS (Jurine).

1853. *Lynceus trigonellus*, Lilljeborg, De Crust. ex ord. tribus Clad.,
 Ostrac. et Copep. p. 80, pl. ix. fig. 1.
 1863. *Pleuroxus aduncus*, Schödler, Neue Beiträge z. Naturgesch.
 d. Cladoceren, p. 46, pl. iii. fig. 59.
 1867. *Lynceus trigonellus*, Norman & Brady, p. 391, pl. xxi. fig. 11.
 1888. *Pleuroxus aduncus*, Daday de Deés, Crust. Cladoc. Faunæ
 Hungaricæ, p. 92, pl. i. figs. 36, 37.
 1900. *Pleuroxus aduncus*, Lilljeborg, p. 541, pl. lxxv. figs. 11-17.

Slapton Lea ; River Axe at Axminster (A. M. N.).

CHYDORUS SPHERICUS (O. F. Müller).

1850. *Chydorus sphericus*, Baird, p. 126, pl. xvi. fig. 8.
 1867. *Chydorus sphericus*, Norman & Brady, p. 399, pl. xxi. fig. 12.
 1895. *Chydorus sphericus*, Th. Scott, Thirteenth Ann. Rep. Fish.
 Board Scotland, pl. v. figs. 9, 22.
 1900. *Chydorus sphericus*, Lilljeborg, p. 561, pl. lxxvii. figs. 8-25.

Everywhere.

CHYDORUS LATUS, G. O. Sars.

1862. *Chydorus latus*, G. O. Sars, "Om de i Omegnen af Christiania
 ferekommende Cladocerer" (Andet Bidrag), p. 41 (separate copy).
 1888. *Chydorus latus*, Daday de Deés, Crust. Clad. Faunæ Hun-
 garicæ, p. 88, pl. i. figs. 7, 11.
 1895. *Chydorus latus*, Stengelin, Die Cladocerer der Umgebend von
 Basel, p. 261, pl. viii. figs. 43-45.
 1900. *Chydorus latus*, Lilljeborg, p. 557, pl. lxxvi. figs. 18, 19,
 pl. lxxvii. figs. 1-7.

Exeter Canal (A. M. N.).

CHYDORUS GLOBOSUS, Baird.

1850. *Chydorus globosus*, Baird, p. 127, pl. xvi. fig. 7.
 1867. *Lynceus globosus*, Norman & Brady, p. 398, pl. xx. fig. 5.
 1900. *Chydorus globosus*, Lilljeborg, p. 547, pl. lxxv. figs. 18-27,
 pl. lxxvi. fig. 1.

In the lake at Stover Park (A. M. N.).

Tribe II. GYMNOMERA.

Fam. POLYPHEMIDÆ.

POLYPHEMUS PEDICULUS (Linné).

1850. *Polyphemus pediculus*, Baird, p. 111, pl. xvii. fig. 1.

1900. *Polyphemus pediculus*, Lilljeborg, p. 594, pl. lxxix. figs. 22-31, pl. lxxx. figs. 1-9.

Canal near Newton Abbott, Exeter Canal (*A. M. N.*).

EVADNE NORDMANNI, S. Lovén.

1850. *Evadne Nordmanni*, Baird, p. 114, pl. xvii. fig. 2.

1900. *Evadne Nordmanni*, Lilljeborg, p. 641, pl. lxxxvi. figs. 4-17.

Frequent and at times common off the coasts.

PODON INTERMEDIUS, Lilljeborg.

1853. *Podon intermedius*, Lilljeborg, De Crust. ex ord. tribus Clad., Ostrac. et Copep. in Scania occurrentibus, p. 161.

1867. *Podon intermedius*, P. E. Müller, Danmarks Cladocera, p. 215, pl. v. fig. 22, pl. vi. figs. 1-4.

1900. *Podon intermedius*, Lilljeborg, p. 627, pl. lxxxiv. figs. 8-16, pl. lxxxv. figs. 1-6.

In the tow-net during the summer months off Plymouth (*T. V. Hodgson*, iv. p. 175, and *Dr. Gough*).

PODON LEUCKARTII (G. O. Sars).

1862. *Pleopsis Leuckartii*, G. O. Sars, "Om de i Omegnen af Christiania ferekommende Cladocerer" (Andet Bidrag), p. 45.

1867. *Podon polyphemoides*, P. E. Müller (nec Leuckart), Danmarks Cladocera, p. 220, pl. vi. figs. 5, 6.

1900. *Podon Leuckartii*, Lilljeborg, p. 636, pl. lxxxv. fig. 12, pl. lxxxvi. figs. 1-3.

Recorded by *Dr. Gough* as taken in the tow-net off the south coasts of Devon and Cornwall, but it is apparently scarce.

Order X. OSTRACODA.

The following are the leading publications on the Ostracoda of Europe and the North Atlantic which will be referred to in the succeeding pages :—

1865. SARS (G. O.).—Oversigt af Norges Marine Ostracoder. Vid.-Selsk. Forhand. Christiania.
 1868. BRADY (G. S.).—A Monograph of the Recent British Ostracoda. Trans. Linn. Soc. vol. xxvi. pp. 353–495, pls. xxiii.–xli.
 1889 & 1896. BRADY (G. S.) and NORMAN (A. M.).—Monograph of the Marine and Freshwater Ostracoda of the North Atlantic and of North-Western Europe: Section I. Podocopa. Trans. Royal Dublin Soc. ser. 2, vol. iv. pp. 63–270, pls. viii.–xxiii. 1889.—Pt. 2. Sections II.–IV. Myodocopa, Cladocopa, and Platycopa. Trans. Royal Dublin Soc. ser. 2, vol. v. pp. 621–746, pls. l–lxviii. 1896.
 1891. VÁVRA (W.).—Monographie des Ostracoden Böhmens. Archiv der Naturwiss. Landesdurchforschung von Böhmen, vol. viii. pp. 1–112 (separate copy).
 1898–1901. HARTWIG (W.).—Many short papers on species of *Candona* in the 'Zoologischer Anzeiger,' vols. xxi.–xxiv., and Sitzungs-Bericht der Gesellschaft naturforschender Freunde zu Berlin. 1898–1901.
 1900. KAUFMANN (A.).—Cypriden und Darwinuliden. Revue Suisse de Zoologie, vol. viii. pp. 209–423, pls. xv.–xxxii.
 1900. MÜLLER (G. W.).—Zoologica, Heft 30: Deutschlands Süßwasser-Ostracoden.

Tribe I. PODOCOPA.

Fam. 1. CYPRIDIDÆ.

CYPRIA OPHTHALMICA (Jurine).

1868. *Cypris compressa*, Brady, p. 372, pl. xxiv. figs. 1–5, pl. xxxvi. fig. 6.
 1889. *Cypris ophthalmica*, Brady & Norman, p. 69, pl. xi. figs. 5–9.

Common, occurring in most gatherings.

CYCLOCYPRIS LÆVIS (O. F. Müller).

1850. *Cypris minuta*, Baird, British Entomostraca, p. 155, pl. xviii. figs. 7, 8.
 1868. *Cypris ovum* (Jurine), Brady, p. 373, pl. xxiv. figs. 31–34, and pl. xxxvi. fig. 8.
 1889. *Cypriu lævis*, Brady & Norman, p. 69; and 1896, *Cyclocypris lævis*, p. 718.
 1894. *Cyclocypris pygmæa*, Croneberg, "Beitrag zur Ostracodenfauna der Umgegend von Moskau," Bull. Soc. Impér. Naturalistes de Moscou, p. 11, fig. 9 (separate copy).
 1900. *Cyclocypris lævis*, Kaufmann, p. 320, pl. xix. figs. 23–25, pl. xxiii. figs. 9–12, pl. xxix. fig. 7.
 1900. *Cyclocypris pygmæa*, G. W. Müller, p. 42, pl. x. figs. 1–13.

Canal near Newton Abbott, lake in Stover Park, large pond at Torcross (A. M. N.); ponds near Helston and on the Lizard (R. Vallentin!).

CYCLOCYPRIS SERENA (Koch).

1868. *Cypris lævis*, Brady, p. 274, pl. xxiv. figs. 21-26, pl. xxxvi. fig. 5.
 1889. *Cypris serena*, Brady & Norman, p. 70; and 1896, *Cyclocypris serena*, p. 718.
 1891. *Cyclocypris lævis*, Vávra, p. 68 (not synonyms) and figs.
 1894. *Cyclocypris serena*, Croneberg, l. c. p. 10, fig. 8.
 1900. *Cyclocypris serena*, Kaufmann, p. 325, pl. xix. figs. 21, 23, pl. xxiii. figs. 1-8, pl. xxix. fig. 18.
 1900. *Cyclocypris lævis*, G. W. Müller, p. 41, pl. x. figs. 14-22.

There has been great confusion between this and the last species, which, considering their small size and slight differences, is scarcely to be wondered at. We have given references to the figures which best distinguish the two forms; those of Kaufmann are perhaps the best.

Pond at Mazarion and near Parr Station (*R. Vallentin*!).

CYPRIS FUSCATA (Jurine).

1863. *Cypris fusca*, Brady, p. 362, pl. xxiii. figs. 10-15.
 1889. *Cypris fuscata*, Brady & Norman, p. 73, pl. xii. figs. 3, 4.
 1891. *Cypris fuscata*, Vávra, p. 98, fig. 33.
 1900. *Cypris fuscata*, Kaufmann, p. 270, pl. xv. figs. 14-16, pl. xviii. figs. 14-20.
 1900. *Cypris fuscata*, G. W. Müller, p. 66, pl. xvi. figs. 5, 6, 8, 9.

Lake in Stover Park, Slapton Lea (*A. M. N.*); near St. Ives and Mazarion (*R. Vallentin*!). This is also *Candona hispida* of Baird, and *Cypris oblonga*, Brady.

CYPRIS VIRENS (Jurine).

1850. *Cypris tristriata*, Baird, p. 152, pl. xviii. figs. 1-3.
 1868. *Cypris virens*, Brady, p. 264, pl. xxiii. figs. 23-32, pl. xxxvi. fig. 1.
 1889. *Cypris virens*, Brady & Norman, p. 74.
 1891. *Cypris virens*, Vávra, p. 102, fig. 3 and fig. 36.
 1900. *Cypris virens*, G. W. Müller, pl. xv. figs. 1-4, 7-10, 16-18.

Moor at 700 feet near St. Ives and near Helston (*R. Vallentin*!).

CYPRIS RETICULATA, Zaddach.

1839. *Cypris reticulata*, Brady & Norman, p. 76, pl. viii. figs. 1, 2, pl. xi. figs. 5-7 (and synonyms).
 1891. *Cypris reticulata*, Vávra, p. 99, fig. 34.
 1900. *Cypris affinis*, Kaufmann, p. 272, pl. xv. figs. 17-20, pl. xviii. figs. 10-13, pl. xxxi. fig. 26.
 1900. *Cypris reticulata*, G. W. Müller, p. 68, pl. xvi. figs. 3, 4, 11, 13.

We found this species in a gathering kindly made for us by Mr. Vallentin in "Hayle Kimbra," a large pond on the Lizard. At the time of Mr. Vallentin's visit in Oct. 1905 the pond was very nearly dried up and divided into two parts.

CYPRINOTUS PRASINUS (S. Fischer).

1850. *Cypris strigata*, Baird (nec Müller), p. 157 (from specimens).
 1855. *Cypris prasina*, S. Fischer, Beitrag zur Kenntniss der Ostracoden, p. 644, pl. xix. figs. 9-13.
 1868. *Cypris salina*, Brady, p. 368, pl. xxvi. figs. 8-13.
 1870. *Cypris freterensis*, Brady & Robertson, Ann. & Mag. Nat. Hist. ser. 4, vol. vi. p. 13, pl. iv. figs. 7-9.
 1896. *Cyprinotus prasinus*, Brady & Norman, p. 722.
 1900. *Cyprinotus salinus*, G. W. Müller, p. 76, pl. xvi. figs. 1, 2, 10, 12.

There can be no question as to the identity of this species with the *Cypris prasina* of Fischer, since the type locality was Palermo, where A. M. N. has taken it in the Botanical Gardens of the town.

Topsham Marshes in brackish water (A. M. N.); Hayle, in pond near the sea (R. Vallentin!).

CYPRINOTUS INCONGRUENS (Ramdohr).

1850. *Cypris aurantia*, Baird, p. 159, pl. xix. fig. 13.
 1868. *Cypris incongruens*, Brady, p. 362, pl. xxiii. figs. 16-22.
 1889. *Cypris incongruens*, Brady & Norman, p. 73, pl. xii. figs. 8, 9; and 1896, p. 721, pl. lxiv. figs. 17-18, pl. lxviii. figs. 22, 23, ♂.
 1891. *Cypris incongruens*, Vávra, p. 95, pl. xxxii. figs. 1-6.
 1900. *Cypris incongruens*, Kaufmann, p. 264, pl. xv. figs. 10-12, pl. xviii. fig. 5.
 1900. *Cyprinotus incongruens*, G. W. Müller, p. 77, pl. xiii. figs. 12-22.

Pond by an old mine near St. Ives and near Helston (R. Vallentin).

HERPETOCYPRIS REPTANS (Baird).

1869. *Cypris reptans*, Brady, p. 370, pl. xxv. figs. 10-14, pl. xxxvi. fig. 4.
 1889. *Erpetocypris reptans*, Brady & Norman, p. 84, pl. xiii. fig. 27.
 1891. *Cypris reptans*, Vávra, p. 86, fig. 28.
 1900. *Herpetocypris reptans*, Kaufmann, p. 282, pl. xvi. figs. 1-3, pl. xviii. figs. 21-26.
 1900. *Cypris reptans*, G. W. Müller, p. 58, pl. xiv. figs. 4, 6, 12, 13, 17.

Canal near Newton Abbott, lake in Stover Park, pond at Kingsteignton, large pond at Torcross, Slapton Lea (A. M. N.).

HERPETOCYPRIS TUMEFACIA (Brady & Robertson).

1870. *Cypris tumefacta*, Brady & Robertson, "Ostracoda and Foraminifera of Tidal Rivers," Ann. & Mag. Nat. Hist. ser. 4, vol. vi. p. 13, pl. iv. figs. 4-6.
 1889. *Erpetocypris tumefacta*, Brady & Norman, p. 87, pl. viii. figs. 5-7, pl. xiii. fig. 18.

1890. *Herpetocypris tumefacta*, G. O. Sars, "Oversigt af Norges Crustaceer: II. Branchiopoda, Ostracoda, Cirripedia," Vid.-Selsk. Forhand. Christiania, p. 62.
 1900. *Prionocypris tumefacta*, Kaufmann, p. 295, pl. xvi. figs. 13-15, pl. xxi. figs. 9-13.
 1900. *Cypris tumefacta*, G. W. Müller, p. 73, pl. xvii. figs. 4, 8, 13.

Large pond at Torcross, June 22, 1904 (*A. M. N.*).

ILYODROMUS OLIVACEUS.

1889. *Erpetocypris olivacea*, Brady & Norman, p. 89, pl. i. figs. 3, 4.
 1891. *Cypris olivacea*, Vávra, p. 88, fig. 29.
 1894. *Erpetocypris olivacea*, Croneberg, "Beitrag zur Ostracoden-fauna der Umgegend von Moskau," Bull. Soc. Imp. des Naturalistes de Moscou, p. 14, pl. vii. figs. 13 *a-d* (separate copy).
 1895. *Ilyodromus olivaceus*, G. O. Sars, "Contrib. Freshwater Entom. New Zealand," Vid.-Selsk. Skrifter, p. 39 (separate copy).
 1896. *Ilyodromus olivaceus*, Brady & Norman, p. 724.
 1900. *Ilyodromus olivaceus*, Kaufmann, p. 299, pl. xx. figs. 7-9, pl. xxi. figs. 17-21.

In a small pond close to the road leading south from Ilfracombe (*A. M. N.*).

PIONOCYPRIS VIDUA (O. F. Müller).

1850. *Cypris vidua*, Baird, Brit. Entom. p. 152, pl. xviii. figs. 1-3.
 1850. *Cypris sella*, id. ibid. p. 158, pl. xix. fig. 5.
 1868. *Cypridopsis vidua*, Brady, p. 375, pl. xxiv. figs. 27-36, 46.
 1896. *Pionocypris vidua*, Brady & Norman, p. 726, pl. lxiv. fig. 19.

This would seem to be the commonest Ostracod of the freshwaters of Devon and Cornwall.

PIONOCYPRIS OBESA (Brady & Robertson).

1869. *Cypridopsis obesa*, Brady & Robertson, "Notes on a Week's Dredging in the West of Ireland," Ann. & Mag. Nat. Hist. ser. 4, vol. iii. p. 12, pl. xviii. figs. 5-7 (separate copy).
 1889. *Cypridopsis vidua*, variety, Brady & Norman, p. 89.
 1890. *Cypridopsis obesa*, G. O. Sars, "Oversigt af Norges Crustaceer: II. Branchiopoda, Ostracoda, Cirripedia," Vid.-Selsk. Forhand. Christiania, p. 92.
 1896. *Pionocypris obesa*, Brady & Norman, p. 726.

The handless form, which bears the above name, found in the River Otter near Honiton (*A. M. N.*).

CYPRIDOPSIS ACULEATA (O. G. Costa).

1868. *Cypridopsis aculeata*, Brady, p. 376, pl. xxiv. figs. 16-20, pl. xxxvi. fig. 10.
 1896. *Cypridopsis aculeata*, Brady & Norman, p. 725.
 1900. *Cypridopsis aculeata*, G. W. Müller, p. 85, pl. xviii. figs. 10, 18, 19, pl. xix. fig. 1.

This is *Cypris aculeata* of Lilljeborg, but it had been described under the same name by O. G. Costa many years before.

In the lake at Tresco, Scilly Isles, near the outlet to the sea (*A. M. N.*); pools near Hayle and on the Lizard (*R. Vallentin!*).

CYPRIDOPSIS NEWTONI, Brady & Robertson.

1870. *Cypridopsis? Newtoni*, Brady & Robertson, "Ostracoda and Foraminifera of Tidal Rivers," Ann. & Mag. Nat. Hist. ser. 4, vol. vi. p. 14, pl. vii. figs. 14-16.

1889. *Cypridopsis? Newtoni*, Brady & Norman, p. 90, pl. viii. figs. 16, 17.

1891. *Cypridopsis Newtoni*, Vávra, p. 77, fig. 24.

1900. *Cypridopsis Newtoni*, G. W. Müller, p. 83, pl. xvii. figs. 17-20.

Among *Sphagnum* near Grimspound on Dartmoor at an elevation of 1450 feet (*A. M. N.*).

ILYOCYPRIS BISTRIGATA (Jurine).

1820. *Monoculus bistrigatus*, Jurine, Histoire des Monocles, p. 177, pl. xix. figs. 12, 13.

1833. *Cypris biplicata*, C. L. Koch, Deutschlands Crustaceen, Myriapoden und Arachniden, Heft 21, no. 16.

1868. *Cypris gibba*, Brady (*partim*), p. 369, pl. xxiv. figs. 47-53 (nec fig. 54, nec pl. xxxvi. fig. 2).

1889. *Ilyocypris gibba*, Brady & Norman, p. 107 (*partim*, nec pl. xxii. figs. 1-5).

1890. *Ilyocypris Bradii*, G. O. Sars, "Oversigt af Norges Crustaceer: II. Branchiopoda, Ostracoda, Cirripedia," Vid.-Selsk. Forhand. Christiania, p. 59.

1891. *Ilyocypris gibba*, var. *repens*, Vávra, p. 60, fig. 18.

1896. *Ilyocypris Bradii*, Brady & Norman, p. 728, pl. lxiii. figs. 22, 23, pl. lxviii. figs. 18, 19.

1900. *Ilyocypris Bradii*, Kaufmann, p. 353, pl. xxiv. figs. 1, 2, pl. xxv. figs. 17, 18.

1900. *Ilyocypris Bradii*, G. W. Müller, p. 90, pl. xix. figs. 9, 11-19, pl. xx. figs. 17, 18.

Pond near Ilfracombe (*A. M. N.*); near St. Ives (*R. Vallentin!*).

CANDONA CANDIDA (O. F. Müller).

1850. *Candona lucens*, Baird, p. 160, pl. xix. fig. 1.

1889. *Candona candida*, var. *tumida*, Brady & Norman, p. 99, pl. x. figs. 14-17.

1891. *Candona candida*, Vávra, p. 48, fig. 14.

1900. *Candona candida*, Kaufmann, p. 379, pl. xxvii. figs. 10-13, pl. xxviii. figs. 18-25.

1900. *Candona candida*, G. W. Müller, p. 15, pl. ii. figs. 1-3, 7-12.

1901. *Candona candida*, Hartwig, "Arten der Ostracoden-Unterfamilie Cardoninae," Sitzungs-Bericht der Gesellschaft naturforschender Freunde zu Berlin, April 16, 1901, p. 88.

Exeter Canal (*A. M. N.*).

CANDONA NEGLECTA, G. O. Sars.

1887. *Candona neglecta*, G. O. Sars, "Nye Bidrag til Kundskaben om Middelhavets Invertebratfauna: IV. Ostracoda Mediterranea," Archiv f. Mathemat. og Naturvid. p. 107, pl. xv. figs. 5-7, pl. xix.
 1889. *Candona candida*, Brady & Norman (*partim*), pl. x. figs. 20-23.
 1891. *Candona fabæformis*, Vávra, p. 46, figs. 12, 13.
 1898. *Candona Vávrai*, Hartwig, Zool. Anzgr. p. 566.
 1900. *Candona neglecta*, Kaufmann, p. 387, pl. xxix. figs. 1-5, pl. xxx. figs. 5-7, pl. xxxi. fig. 21.
 1900. *Candona neglecta*, G. W. Müller, p. 17, pl. ii. figs. 4-6, 13-18.
 1901. *Candona neglecta*, Hartwig, "Arten der Ostracoden-Unterfamilie Candoninæ," l. c. p. 91.

The lake or pond on the Lizard known as Hayle Kimbra (*R. Vallentin*!).

CANDONA LACTEA, Baird.

1850. *Candona lactea*, Baird, Proc. Zool. Soc. London, p. 255, pl. xviii. (*Annulosa*) figs. 25-27.
 1868. *Candona lactea*, Brady, p. 382, pl. xxiv. figs. 55-58.
 1889. *Candona lactea*, Brady & Norman, p. 100.

This most likely is a young form, but Brady and Norman have pointed out how it is distinguished from what they consider to be the young of *Candona candida*.

The River Otter near its mouth (*A. M. N.*).

CANDONA COMPRESSA (C. L. Koch).

1868. *Candona compressa*, Brady, p. 382, pl. xxvi. figs. 22-27.
 1889. *Candona pubescens*, Brady & Norman (*vir* Koch), p. 101; and 1896. *Candona compressa*, p. 728.
 1891. *Candona pubescens*, Vávra, p. 43, fig. 11.
 1894. *Candona compressa*, Croneberg, "Beitrag zur Ostracodenfauna der Umgegend von Moskau," Bull. Soc. Imp. des Naturalistes de Moscou, p. 8, fig. 4.
 1900. *Candona fallax*, G. W. Müller, p. 27, pl. iv. figs. 2, 11, 15, 16.
 1901. *Candona compressa*, Hartwig, "Arten der Ostracoden-Unterfamilie Candoninæ," l. c. p. 104.

Old well near St. Ives, and Hayle Kimbra on the Lizard (*R. Vallentin*!).

CANDONA FABÆFORMIS (S. Fischer).

1851. *Cypris fabæformis*, Fischer, Ueber das Genus *Cypris*, p. 146, pl. iii. figs. 6-16, ♂ ♀.
 1853. *Candona fabæformis*, Lilljeborg, De Crust. ex ord. tribus &c. p. 207, ♂ ♀.
 1870. *Candona diaphana*, Brady & Robertson, Ann. & Mag. Nat. Hist. ser. 4, vol. vi. p. 18, pl. v. figs. 1-3, ♀.

1889. *Candona fabæformis*, Brady & Norman, p. 103 (excl. syn. *C. hyalina*), pl. ix. figs. 1-4.
 1898. *Candona Bradyi*, Hartwig, Zool. Anzgr. p. 567.
 1900. *Candona Bradyi*, Kaufmann, p. 412.
 1900. *Candona fabæformis*, G. W. Müller, p. 29, pl. vii. figs. 1-7, 12, 13.
 1900. *Candona Holzkampfi*, Hartwig, Sitzungs-Bericht der Gesells. naturforsch. Freunde zu Berlin, p. 149, woodcut, ♂ ♀.
 1901. *Candona Bradyi*, Hartwig, "Arten der Ostracoden-Unterfamilie Candoninæ," l. c. p. 112.
 1901. *Candona Holzkampfi*, Hartwig, "Arten der Ostracoden-Unterfamilie Candoninæ," l. c. p. 115.

In the Torquay Reservoir (*A. M. N.*).

PARACYPRIS POLITA, G. O. Sars.

Ilfracombe, Dartmouth, and Start Bay (*A. M. N.*); Scilly Isles (*G. S. Brady*).

PONTOCYPRIS MYTILOIDES (Norman).

Start Bay, Salcombe, Scilly Isles (*A. M. N.*).

PONTOCYPRIS TRIGONELLA, G. O. Sars.

Ilfracombe, Dartmouth, Plymouth, Scilly Isles (*A. M. N.*).

ANCHISTROCHELES ACEROSA (*G. S. Brady*).

Off the Eddystone (*G. S. Brady*). This is a rare and interesting species.

ARGILLÆCIA CYLINDRICA, G. O. Sars.

Off the Eddystone Lighthouse, and St. Mary's, Scilly (*G. S. Brady*); Start Bay and Salcombe (*A. M. N.*).

Fam. 2. DARWINULIDÆ.

DARWINULA STEVENSONI, Brady & Robertson.

1870. *Polychæles Stevensoni*, Brady & Robertson, "Ostracoda and Foraminifera of Tidal Rivers," Ann. & Mag. Nat. Hist. ser. 4, vol. vi. p. 25, pl. vii. figs. 1-7, pl. x. figs. 4-14 (separate copy).
 1870. *Argillæcia aurea*, iid. *ibid.* p. 16, pl. viii. figs. 4, 5.
 1872. *Darwinella Stevensoni*, iid. *ibid.* ser. 4, vol. ix. p. 50.
 1885. *Darwinula Stevensoni*, iid. in Jones (T. R.), "Ostracoda of the Purbeck Formation," Quart. Journ. Geol. Soc. vol. xli. p. 346.
 1889. *Darwinula Stevensoni*, Brady & Norman, p. 122, pl. x. figs. 7-13, pl. xiii. figs. 1-9, pl. xxiii. fig. 5.

1894. *Darwinula Stevensoni*, G. W. Müller, "Ostracoden des Golfes von Neapel," Fauna und Flora des Golfes von Neapel, p. 386, pl. xxxii. figs. 12-22, and figures on pages 22, 35, 45, 67, & 71.
 1900. *Darwinula Stevensoni*, Kaufmann, p. 393, pl. xxix. figs. 14-16, pl. xxx. figs. 19-23.

Near the mouth of the River Otter, Devonshire (*A. M. N.*).

Fam. 3. BAIRDIIDÆ.

BAIRDIA INFLATA, Norman.

Devonshire coast (*Spence Bate's dredgings*); Plymouth (*A. M. N.*).

BAIRDIA ACANTHIGERA, G. S. Brady.

Devonshire coast (*Spence Bate's dredgings*); Plymouth (*A. M. N.*).

Fam. 4. CYTHERIDÆ.

CYTHERE LUTEA (Müller).

A common tide-mark species. Ilfracombe (*G. S. B.*); Dartmouth, Plymouth, Falmouth (*A. M. N.*).

CYTHERE CYAMOS, Norman.

1865. *Cythere viridis*, G. O. Sars, "Oversigt af Norges Marine Ostracoden," Vid.-Selsk. Forhand. Christ. p. 30.
 1868. *Cythere viridis*, G. S. Brady, p. 397, pl. xxviii. figs. 40, 41, and 57-59, pl. xxxviii. fig. 8.
 1886. *Cythere cyamos*, Norman, "Museum Normanianum, III. Crustacea," p. 24, no. 1043.

We at one time thought that this was the young of *C. lutea*, but though the young of that *Cythere* is very like *C. cyamos*, it has not exactly the same form. *Cythere viridis*, Müller, we believe to be the *Lovoconcha* referred to under that genus.

Off Berry Head, Start Bay, Dartmouth (*A. M. N.*).

CYTHERE CONFUSA, Brady & Norman.

1868. *Cythere pellucida*, Brady, p. 397, pl. xxviii. figs. 22-26, 28.
 1889. *Cythere confusa*, Brady & Norman, p. 127, pl. xiv. figs. 16-18.

Barnstaple, Ilfracombe, off Berry Head, Start Bay, Dartmouth, Plymouth, Falmouth (*A. M. N.*); Scilly Isle. (*Brady & Robertson*).

CYTHERE PELLUCIDA, Baird.

1868. *Cythere castanca* (Sars), Brady, l. c. p. 398, pl. xxviii. fig. 27, and pl. xxxviii. fig. 6.

1889. *Cythere pellucida*, Brady & Norman, l. c. p. 126, pl. xiv. figs. 13-15.

Barnstaple, Ilfracombe, Start Point, Dartmouth (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

CYTHERE MACALLANA, Brady & Robertson.

Ilfracombe, Salcombe (*A. M. N.*); Fowey and Scilly Isles (*Brady & Rob.*).

CYTHERE PORCELLANEA, G. S. Brady.

Barnstaple, Westward Ho, Ilfracombe, Dartmouth (*A. M. N.*); Scilly (*Brady & Rob.*).

CYTHERE TENERA, G. S. Brady.

Ilfracombe, off Berry Head, and Start Bay (*A. M. N.*).

CYTHERE SEMIPUNCTATA, G. S. Brady.

Ilfracombe and off Berry Head (*A. M. N.*); near Eddystone and Scilly Isles (*Brady & Rob.*).

CYTHERE BADIA, Norman.

Rock pools, Mounts Bay (*A. M. N.*); Fowey and Scilly Isles (*Brady & Rob.*).

CYTHERE CRISPATA, G. S. Brady.

Ilfracombe and Scilly (*Brady & Rob.*); Start Bay and Dartmouth (*A. M. N.*).

CYTHERE TERES, G. S. Brady.

Dartmouth Harbour, near mouth, 3-5 fathoms, 1875, and again in 1904; the only known British locality (*A. M. N.*).

CYTHERE OBLONGA, G. S. Brady.

Ilfracombe, Salcombe, Plymouth (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

CYTHERE ALBOMACULATA, Baird.

A common species between tide-marks all round the coast.

CYTHERE ROBERTSONI, Brady.

Ilfracombe, off Berry Head, Dartmouth, Start Bay (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

CYTHERE CONVEXA, Baird.

Torquay (*C. Williamson*); Ilfracombe, Start Bay, Burgh Island, Dartmouth, Falmouth (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

CYTHERE MARGINATA, Norman.

Salcombe (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

CYTHERE CUNEIFORMIS, G. S. Brady.

Ilfracombe, Dartmouth, and Scilly Isles (*Brady & Rob.*); Start Bay, Dartmouth (*A. M. N.*).

CYTHERE NAVICULA (Norman).

Salcombe, Start Bay, Dartmouth, Plymouth (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

CYTHERE VILLOSA (G. O. Sars).

Ilfracombe and Scilly Isles (*Brady & Rob.*); Exmouth, Dartmouth, Salcombe, Plymouth, Falmouth (*A. M. N.*).

CYTHERE PULCHELLA, G. S. Brady.

Ilfracombe, Dartmouth, Salcombe (*A. M. N.*).

CYTHERE QUADRIDENTATA, Baird.

Ilfracombe, Start Bay, Plymouth (*A. M. N.*).

CYTHERE EMACIATA, G. S. Brady.

Ilfracombe, Plymouth (*A. M. N.*); near the Eddystone Lighthouse (*Brady & Rob.*).

CYTHERE RUNCINATA, Baird.

Dartmouth Harbour, 1875 and 1904, and Plymouth Sound, 1889 (*A. M. N.*).

CYTHERE TUBERCULATA (G. O. Sars).

Exmouth and Plymouth (*A. M. N.*).

CYTHERE FINMARCHICA (G. O. Sars).

Dartmouth (*A. M. N.*); Ilfracombe, near the Eddystone, and Fowey (*Brady & Rob.*).

CYTHERE ANTIQUATA (Baird).

Dartmouth and Plymouth (*A. M. N.*); near the Eddystone and Scilly Isles (*Brady & Rob.*).

CYTHERE WHITEI (Baird).

Torquay (*Williamson*, the types); Dartmouth (*A. M. N.*).

CYTHERE JONESII (Baird).

Off the Eddystone Lighthouse (*Brady & Rob.*).

LIMNICYTHERE INOPINATA (Baird).

Exeter Canal (*A. M. N.*).

CYTHERIDEA ELONGATA, G. S. Brady.

Ilfracombe, Dartmouth, off Berry Head, Burgh Island, Salcombe (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

CYTHERIDEA TOROSA (T. R. Jones).

Barnstaple, Westward Ho, and Dartmouth; in all cases in brackish water, and only the smooth form var. *teres*, Brady, found.

EUCYTHERE DECLIVIS (Norman).

Plymouth, Falmouth (*A. M. N.*); Devonshire (*G. S. Brady*).

Var. *ARGUS*, Brady & Rob.

Ilfracombe (*Brady & Rob.* and also *A. M. N.*).

Var. *PRAVA*, Brady & Rob.

Ilfracombe and Scilly Isles (*Brady & Rob.*).

LOXOCONCHA IMPRESSA (Baird).

Ilfracombe, Dartmouth, Start Bay, Salcombe (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

LOXOCONCHA GUTTATA (Norman).

Ilfracombe, off Berry Head, Dartmouth, Start Bay, Plymouth (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

LOXOCONCHA VIRIDIS (O. F. Müller).

This is also *Cythere viridis*, Lilljeborg; *Cythere flava*, Zenker; *C. rhomboidea*, Fischer; *Normania grisea*, Brady; and *Loxoconcha elliptica*, Brady.

It is essentially a brackish-water form. Barnstaple, Dartmouth, Kingsbridge Estuary, Plymstock near Plymouth (*A. M. N.*).

LOXOCOCONCHA TAMARINDUS (T. R. Jones).

This is *Cythere levata*, Norman, and *Loxoconcha longipes*, Sars.

Ilfracombe, Dartmouth, Burgh Island, Falmouth (*A. M. N.*); off Eddystone Lighthouse and Scilly Isles (*Brady & Rob.*).

LOXOCOCONCHA MULTIFORA (Norman).

Start Bay, Plymouth, Fowey, 150 miles off the Land's End in 200 fathoms (*A. M. N.*); Ilfracombe, off the Eddystone, and Scilly Isles (*Brady & Rob.*).

XESTOLEBERIS AURANTIA (Baird).

Ilfracombe, near the Eddystone, and Scilly Isles (*Brady & Rob.*); Berry Head, Start Bay, Dartmouth, Salcombe, Falmouth (*A. M. N.*).

XESTOLEBERIS DEPRESSA, G. O. Sars.

Ilfracombe, Falmouth (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

XESTOLEBERIS LABIATA, Brady & Robertson.

Dartmouth, Salcombe, Plymouth, Falmouth (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

CYTHERURA GIBBA (O. F. Müller).

Dartmouth (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

CYTHERURA CORNUTA, G. S. Brady.

Start Bay, Salcombe (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

CYTHERURA SELLA, G. O. Sars.

This is *C. cuneata* and *C. flavescens* of Brady.

Ilfracombe, off Berry Head, Salcombe, Plymouth (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

CYTHERURA ACUTICOSTATA, G. O. Sars.

Start Bay, Plymouth (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

CYTHERURA STRIATA, G. O. Sars.

C. quadrata, Norman, is the female of this species.

Dartmouth, Salcombe, Start Bay, Plymouth (*A. M. N.*); Ilfracombe and Scilly Isles (*Brady & Rob.*).

CYTHERURA ANGULATA, G. S. Brady.

Dartmouth, Start Bay, Salcombe, Plymouth (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

CYTHERURA PRODUCTA, G. S. Brady.

Ilfracombe, Start Bay (*A. M. N.*); off the Eddystone and Scilly Isles (*Brady & Rob.*).

CYTHERURA UNDATA, G. O. Sars.

Dartmouth (*A. M. N.*).

CYTHERURA NIGRESCENS (Baird).

Everywhere between tide-marks.

CYTHERURA SIMPLEX, Brady & Norman.

Off St. Mary's, Scilly Isles (*Brady & Rob.*); Dartmouth (*A. M. N.*).

CYTHERURA SIMILIS, G. O. Sars.

Scilly Isles (*Brady & Rob.*).

CYTHERURA CONCENTRICA, Brady, Crosskey, & Robertson.

Salcombe (*A. M. N.*).

CYTHERURA FULVA, Brady & Robertson.

Salcombe (*A. M. N.*); off the Eddystone, and off St. Mary's and St. Agnes, Scilly Isles (*Brady & Rob.*).

CYTHERURA CELLULOSA (Norman).

Ilfracombe, off Berry Head, Start Bay, Salcombe (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

CYTHEROPTERON NODOSUM, G. S. Brady.

Salcombe (*A. M. N.*); Ilfracombe, Eddystone, and Scilly Isles (*Brady & Rob.*). These authors recorded *Cytheropteron pyramidale* from Ilfracombe, but subsequently stated the

specimen to be referable to *C. nodosum*. *Cytheropteron latissimum*, Norman, was also by error recorded from the Scilly Isles.

CYTHEROPTERON PUNCTATUM, G. S. Brady.

Off Berry Head and in Start Bay (*A. M. N.*).

CYTHEROPTERON DEPRESSUM, Brady & Norman.

Off the Eddystone Lighthouse and the Scilly Isles (*Brady & Rob.*) ; Dartmouth and Salcombe (*A. M. N.*).

BYTHOCYTHERE CONSTRICTA, G. O. Sars.

Ilfracombe, off the Eddystone, Scilly Isles (*Brady & Rob.*) ; Salcombe (*A. M. N.*).

BYTHOCYTHERE TURGIDA, G. O. Sars.

Off the Eddystone Lighthouse, and among the Scilly Isles (*Brady & Rob.*).

PSEUDOCYTHERE CAUDATA, G. O. Sars.

Off the Eddystone Lighthouse and at the Scilly Isles (*Brady & Rob.*).

SCLEROCHILUS CONTORTUS (Norman).

Ilfracombe, Dartmouth, Plymouth (*A. M. N.*) ; Scilly Isles (*Brady & Rob.*).

CYTHERIDEIS SUBULATA, G. S. Brady.

Ilfracombe, Exmouth, Torquay, off Berry Head, Dartmouth, Start Bay, Plymouth (*A. M. N.*) ; Scilly Isles (*Brady & Rob.*).

CYTHEROIS FISCHERI (G. O. Sars).

Ilfracombe, Dartmouth, Salcombe, Mylor Creek at Falmouth (*A. M. N.*) ; Scilly Isles (*Brady & Rob.*).

Fam. 5. PARADOXOSTOMATIDÆ.

PARADOXOSTOMA VARIABLE (Baird).

Everywhere between tide-marks and in shallow water.

PARADOXOSTOMA ENSIFORME, G. S. Brady.

Ilfracombe, Berry Head, Dartmouth, Start Bay, Plymouth (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

PARADOXOSTOMA ABBREVIATUM, G. O. Sars.

Ilfracombe, Dartmouth, Start Bay, Salcombe, Plymouth (*A. M. N.*).

PARADOXOSTOMA OBLIQUUM, G. O. Sars.

Salcombe, Falmouth (*A. M. N.*); Ilfracombe and Scilly (*Brady & Rob.*).

PARADOXOSTOMA ARCUATUM, G. S. Brady.

Ilfracombe (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

PARADOXOSTOMA NORMANI, G. S. Brady.

Ilfracombe, Exmouth, Dartmouth, Salcombe, and Plymouth (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

PARADOXOSTOMA PULCHELLUM, G. O. Sars.

Salcombe, Falmouth (*A. M. N.*).

PARADOXOSTOMA HIBERNICUM, G. S. Brady.

Ilfracombe, Salcombe, Falmouth (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

PARADOXOSTOMA ORCADENSE, Brady & Robertson.

Off St. Mary's, and in New Grimsby Harbour, Scilly Isles (*Brady & Rob.*).

PARADOXOSTOMA FLEXUOSUM, G. S. Brady.

Ilfracombe, Dartmouth, Start Bay, Plymouth (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

Tribe II. MYODOCOPA.

Fam. 1. ASTEROPIDÆ.

ASTEROPE MARLÆ (Baird).

Plymouth, Penzance (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

ASTEROPE TERES (Norman).

Ilfracombe and the Scilly Isles (*Brady & Rob.*).

Fam. 2. CYPRIDINIDÆ.

PHILOMEDES INTERPUNCTA (Baird).

Plymouth Sound and near the Eddystone Lighthouse (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

Tribe III. CLADOCOPA.

Fam. POLYCOPIDÆ.

POLYCOPE ORBICULARIS, G. O. Sars.

Plymouth (*A. M. N.*); Scilly Isles (*Brady & Rob.*).

POLYCOPSIS COMPRESSA (Brady & Robertson).

In 10–40 fathoms among the Scilly Isles (*Brady & Rob.*).

Order XI. COPEPODA.

The Copepoda are here arranged under the following divisions indicated by Professor G. O. Sars in his introduction to Vol. iv. of his great work on the Crustacea of Norway, now in course of publication :—Calanoida, Harpacticoida, Cyclopoida, Notodelphyoida and Monstrelloida, Caligoida and Lernæoida.

The following works are those which will most frequently be referred to in the following pages, and the list is given in order to shorten the references in the text :—

- 1837 & 1838. KRÖYER.—Om Snyltekrebsene, især med Hensyn til den danske Fauna. Naturhistorisk Tidsskrift, vols. i. & ii.
 1850. BAIRD (W.).—Natural History of the British Entomostraca.
 1863. CLAUS (C.).—Die freilebenden Copepoden.

- 1878 & 1880. BRADY (G. S.).—Monograph of the Free and Semi-parasitic Copepoda of the British Islands (3 volumes).
 1892. GIESBRECHT (W.).—Systematik und Faunistik der pelagischen Copepoden des Golfes von Neapel. (Fauna und Flora des Golfes von Neapel.)
 1892–1897. SCHMEIL (OTTO).—Deutschlands freilebende Süßwasser-Copepoden. I. Cyclopidae, 1892; II. Harpacticidae, 1893; III. Centropagidae, 1896; IV. Nachtrag, 1897.
 1901–1903. SARS (G. O.).—Account of the Crustacea of Norway. Vol. IV. Copepoda Calanoida.
 1903–1905. SARS (G. O.).—Account of the Crustacea of Norway. Vol. V. Copepoda Harpacticoida: Parts I.–X.; pages 1–132.
 1901. LILLJEBORG (W.).—Synopsis specierum huc usque in Suecia observatorum generis *Cyclopis*.
 1902. LILLJEBORG (W.).—Synopsis specierum huc usque in aquis dulcibus Sueciæ observatorum familiæ Harpacticidarum.

All localities given for the species of Copepoda in the following list are those where the species has been collected by A. M. N., unless the name of another carcinologist is given.

Tribe I. CALANOIDA.

The Copepoda in this tribe are arranged as in Vol. iv. of Sars's 'Crustacea of Norway' mentioned above.

Fam. 1. CALANIDÆ.

CALANUS SEPTENTRIONALIS (H. Goodsir).

1843. *Cetochilus septentrionalis*, H. Goodsir, Edinburgh New Philos. Journ. vol. xxxv. p. 336, pl. vi. figs. 1–11.
 1863. *Cetochilus helgolandicus*, Claus, p. 171, pl. xxvi. figs. 2–9.
 1901. *Calanus helgolandicus*, G. O. Sars, p. 11, pl. iv.

Frequent in tow-net gatherings from Plymouth, Salcombe, Falmouth, and the Scilly Isles.

The *Calanus* so common round the British coasts is perhaps, as Sars regards it, a species distinct from *C. finmarchicus* of Gunner, and it is the form named by Dr. Claus *C. helgolandicus*; but Goodsir long before had described the *Calanus* which is abundant in the Firth of Forth, and is identical with the Heligoland form, under the name *Cetochilus septentrionalis*, and his figures so far as they go agree with that form rather than with *C. finmarchicus*, and his name must therefore be employed. Sars has made *C. septentrionalis* a synonym of *C. finmarchicus*, but the locality whence the former was procured, and the form of the animal as seen from above given by Goodsir, clearly show that it was the same as *C. helgolandicus*.

Fam. 2. PARACALANIDÆ.

PARACALANUS PARVUS (Claus).

1863. *Calanus parvus*, Claus, p. 173, pl. xxvi. figs. 10-14.

1901. *Paracalanus parvus*, G. O. Sars, p. 17, pls. viii, ix.

This species, though not very plentiful, appears to be more or less generally distributed, and has been obtained in several gatherings. It occurred in a plankton sample from Plymouth Sound, and in another collected about two and a half miles off Plymouth Breakwater. It was also taken near Eddystone Lighthouse and at Fowey. Dr. G. C. Bourne recorded *Paracalanus parvus* as "not rare" at Plymouth in 1888-1889 (n. s. vol. i. p. 145).

PARACALANUS PARVUS, var. PERPLEXUS, nov. var. (Pls. XII. figs. 1, 2; XIII. fig. 1; XIV. fig. 1.)

A single female specimen of a *Paracalanus* was obtained in one of the tow-net gatherings from Plymouth, which, while having a general resemblance to *Paracalanus parvus*, Claus, exhibited a rather marked peculiarity in the structure of the fifth pair of thoracic feet.

In *Paracalanus parvus* the fifth pair of legs in the female are alike on both sides and very small; they each consist of a single narrow joint about four times longer than broad, and they each bear two setæ at the apex, one being of moderate length, the other very small. In the specimen under consideration the right leg of the fifth pair is similar to those in the female of *Paracalanus parvus*, but the left differs in being two-jointed and considerably elongated. The first joint is moderately and slightly dilated, the second is narrow and about double the length of the right leg; this greater elongation of the left leg was so prominent that it could be observed even without dissection. A drawing of the fifth pair is shown on Plate XII. fig. 2. Other drawings of this variety will be found on Plates XII., XIII., & XIV.

As this specimen does not appear to differ very much from a typical female of *Paracalanus parvus* except in the structure of the left leg of the fifth pair, and as no other specimens similar to it were observed in the various samples examined even though carefully sought for, it may be merely an abnormal form of the species named. Still, as the specimen appeared to be full grown, it may possibly represent a distinct variety, and we therefore propose to distinguish it from the typical form by the varietal name *perplexus*.

Fam. 3. PSEUDOCALANIDÆ.

PSEUDOCALANUS ELONGATUS, Boeck.

1864. *Clansia elongata*, Boeck, "Oversigt Norges Copepoder," Vid.-Selsk. Forh. Christ. p. 234.
 1872. *Pseudocalanus elongatus*, Boeck, "Nye Slægter og Arter af Saltvands-Copep.," Vid.-Selsk. Forh. Christ. p. 38.
 1878. *Pseudocalanus elongatus*, Brady, vol. i. p. 45, pl. iii. figs. 1-9.
 1901. *Pseudocalanus elongatus*, G. O. Sars, p. 20, pls. x., xi.

Salcombe, 1875, and in later gatherings from Devon, Cornwall, and the Scilly Islands, frequent. This Calanoid is usually more common in the open sea than inshore, and occurs sometimes in considerable abundance.

Fam. 4. EUCHÆTIDÆ.

EUCHÆTA HEBES, Giesbrecht.

1888. *Euchæta hebes*, Giesbrecht, Atti Accad. Lincei Roma. Rend. ser. 4, vol. iv. Sem. 2, p. 337; 1892, Pelag. Copep. von Neapel, pp. 246 & 741, pl. xv. figs. 29, 30; pl. xvi. figs. 3-5, 20, 31, 32, 38, 41; pl. xxxvii. figs. 32, 33, 54.

Widely distributed off the south coasts of Devon and Cornwall (*Dr. L. H. Gough*).

Fam. 5. CENTROPAGIDÆ.

CENTROPAGES TYPICUS, Kröyer.

1848. *Centropages typicus*, Kröyer, Naturh. Tidsskr., new ser. vol. ii. p. 588, pl. vi.
 1878. *Centropages typicus*, Brady, vol. i. p. 65, pl. viii. figs. 1-10.
 1902. *Centropages typicus*, G. O. Sars, p. 75, pls. xlix., l., li.

Near Plymouth, August 1889; off Falmouth, June 1884; and New Grimsby Harbour, Scilly, May 1903; Bourne records it as common at Plymouth in 1888-89.

CENTROPAGES HAMATUS (Lilljeborg).

1853. *Ichthyophorba hamata*, Lilljeborg, De Crust. ex ord. tribus Clad., Ostrac. et Copep. in Scania occurrentibus, p. 185, pl. xxi. figs. 1-5, 7-9; pl. xxvi. figs. 9-12.
 1878. *Centropages hamatus*, Brady, vol. i. p. 67, pl. viii. figs. 11-13.
 1902. *Centropages hamatus*, G. O. Sars, p. 76, pl. lii.

Taken at Starcross in June 1884, and on several occasions near Plymouth in August 1903. *C. hamatus*, like most of the pelagic Calanoida, is not so commonly met with inshore as in the open sea.

ISIAS CLAVIPES, Boeck.

1864. *Isias clavipes*, Boeck, "Oversigt Norges Copepoder," Vid.-Selsk. Forh. Christiania, p. 18.

1878. *Isias clavipes*, Brady, vol. i. p. 62, pl. vii. figs. 3-13.

1902. *Isias clavipes*, G. O. Sars, p. 79, pls. liii., liv.

Common in a surface-gathering collected at Salcombe, July 9th, 1875; near Plymouth, in 20 fathoms, in August 1889; and off Falmouth in June 1884. It also occurred in other gatherings from the neighbourhood of Plymouth, Starcross, and Fowey.

Fam. 6. TEMORIDÆ.

TEMORA LONGICORNIS (O. F. Müller).

1792. *Cyclops longicornis*, Müller, Entomostraca Daniæ et Norvegiæ, p. 116.

1878. *Temora longicornis*, Brady, vol. i. p. 54, pl. iii. figs. 10-19.

1902. *Temora longicornis*, G. O. Sars, p. 97, pls. lxxv., lxxvi.

Salcombe, July 1875; off Falmouth, June 1884. Frequent in a gathering from 20 fathoms near Plymouth, collected in August 1889, and in several others from both Devon and Cornwall.

TEMORA STYLIFERA (Dana).

1849. *Calanus stylifer*, Dana, Proc. Amer. Acad. vol. ii. p. 13.

1892. *Temora stylifera*, Giesbrecht, pp. 328, 330, & 765, pl. v. fig. 2; pl. xvii. figs. 1, 2, 4-13, 19, 22; pl. xxxviii. figs. 26, 29.

Collected off the south coast of Devon in 1903 (*Dr. L. H. Gough*).

EURYTEMORA AFFINIS (Pope).

1880. *Temorella affinis*, Pope, Abhandl. herausgegeben vom Naturw. Ver. zu Bremen, vol. vii. p. 55, pl. iii.

1881. *Temorella affinis*, Claus, Die Gattungen *Temora* u. *Temorella*, p. 10, pl. ii. figs. 8-14.

1891. *Eurytemora affinis*, G. S. Brady, "Revision of British Species of Cyclopidae and Calanidae," Nat. Hist. Trans. Northumberland, Durham, and Newcastle-upon-Tyne, vol. xi. p. 42, pl. xiii. figs. 6-9.

1896. *Eurytemora affinis*, Schmeil, iii. p. 114, pl. viii. fig. 11 a, pl. xi. figs. 1-11.

Several specimens—males, females, and young—were obtained in brackish water at Plymstock, Devon, in August 1903. One of the females carrying ova measured fully one and a half millimetres in length (exclusive of the tail setæ).

The body was moderately robust; the lateral expansions of the last segment of the metasome large and terminating in a pointed apex; the genital segment of the abdomen was also produced laterally into angular processes, and the caudal segments, though moderately stout, were scarcely equal to twice the combined lengths of last two abdominal segments.

EURYTEMORA AFFINIS, var. *HIRUNDOIDES*, Nordqvist.

1888. *Temorella affinis*, var. *hirundoides*, Nordqvist, "Die Calaniden Finlands," *Bidrag till Känn. om Finlands Natur och Folk*, vol. xlvii. p. 48, pl. iv. figs. 5-11, pl. v. fig. 5, pl. vi. fig. 3.
 1902. *Eurytemora hirundoides*, G. O. Sars, p. 102, pl. lxix.

A few specimens were obtained amongst weeds, at Fowey, Cornwall, May 9th, 1903. One of the specimens—an adult female—measured scarcely 1.2 mm. in length. The body was less robust than in the last form; the genital segment of the abdomen was only slightly produced laterally, and the furcal joints were longer and more slender than those of *E. affinis*.

Fam. 7. DIAPTOMIDÆ.

DIAPTOMUS CASTOR (Jurine).

1820. *Monoculus castor*, Jurine, *Hist. des Monocles*, p. 50, pls. iv., v., vi.
 1850. *Diaptomus castor*, Baird, p. 219, pl. xxvi. figs. 1, 2, 2 a-j.
 1891. *Diaptomus castor*, Brady, l. c. p. 27, pl. xi. figs. 1-6.
 1896. *Diaptomus castor*, Schmeil, iii. p. 35, pl. i. and pl. iv. figs. 8, 9.
 1902. *Diaptomus castor*, G. O. Sars, p. 85, pls. lvii., lviii.

Found very sparingly at Tresco, Scilly Islands, May 1903; and in a pond at St. Ives, Cornwall, in July 1904. Common in a pond near the Lizard in September 1905, collected by Mr. R. Vallentin.

DIAPTOMUS GRACILIS, G. O. Sars.

1862. *Diaptomus gracilis*, G. O. Sars, *Vid.-Selsk. Forh. Christ.* p. 9.
 1863. *Diaptomus Westwoodi*, Lubbock, "New and little-known Freshwater Entomostraca," *Trans. Linn. Soc.* vol. xxiv. p. 203, pl. xxi. figs. 1-6.
 1891. *Diaptomus gracilis*, G. S. Brady, l. c. p. 29 (*partim*).
 1896. *Diaptomus gracilis*, Schmeil, p. 67, pl. iii. figs. 7-16.
 1902. *Diaptomus gracilis*, G. O. Sars, p. 92, pl. lxiii.

Ponds at Bovey Tracy and at Kingsteignton, Canal at Newton Abbot, lake in Stover Park near Newton Abbot, and one or two other places in Devon, in June 1904.

Fam. 8. METRIDIIDÆ.

METRIDIA LUCENS, Boeck.

1864. *Metridia lucens*, Boeck, Oversigt af Norges Copepoder, p. 14.
 1878. *Metridia armata*, G. S. Brady (*nec* Boeck), vol. i. p. 42, pl. ii. figs. 1-12, pl. lvi. figs. 19, 20.
 1902. *Metridia lucens*, G. O. Sars, p. 113, pl. lxxvii.

A single specimen in a gathering collected in the neighbourhood of Plymouth in August 1889. Not rare in a gathering from St. Mary's Sound, Scilly Islands, collected in May, and in another from Whitsand Bay, collected in August 1903. Dr. G. S. Brady also records this species from the Scilly Islands.

PLEUROMAMMA GRACILIS (Claus).

1863. *Pleuromma gracile*, Claus, p. 197, pl. v.
 1892. *Pleuromma gracile*, Giesbrecht, pp. 347 & 753, pl. v. fig. 7; pl. xxxii. figs. 4, 6, 17-20, 24.
 1898. *Pleuromamma gracilis*, Giesbrecht, Das Tierreich: Copepoda, p. 110.

Collected south of the Scilly Islands in 1903 (*Dr. L. H. Gough*).

PLEUROMAMMA ROBUSTA (Dahl).

1893. *Pleuromma robustum*, Dahl, Zool. Anzeiger, vol. xvi. p. 105.
 1902. *Pleuromamma robusta*, G. O. Sars, p. 115, pls. lxxviii., lxxix.

Taken off the south coast of Cornwall in 1903 (*Dr. L. H. Gough*).

Fam. 9. PSEUDOCYCLOPIDÆ.

PSEUDOCYCLOPS OBTUSATUS, Brady & Robertson.

1873. *Pseudocyclops obtusatus*, Brady & Robertson, Ann. & Mag. Nat. Hist. ser. 4, vol. xii. p. 128, pl. viii. figs. 4-7.
 1878. *Pseudocyclops obtusatus*, G. S. Brady, vol. i. p. 84, pl. xii. figs. 1-13.
 1902. *Pseudocyclops obtusatus*, G. O. Sars, p. 131, pl. lxxxviii.

Very rare in a gathering from the Cattewater, Plymouth, August 1889. In another from Plymouth Sound, August 12th, and in a third from Salcombe, September 9th, 1903.

Fam. 10. CANDACIIDÆ.

CANDACIA ARMATA, Boeck.

1872. *Candace armata*, Boeck, "Nye Slægter og Arter af Saltvands-Copepoder," Vid.-Selsk. Forh. Christ. p. 39.
 1878. *Candace pectinata*, G. S. Brady, vol. i. p. 49, pl. viii. figs. 14, 15; pl. x. figs. 1-12.
 1902. *Candacia armata*, G. O. Sars, p. 135, pl. xci.

Off Penlee Point, Plymouth, August 3rd, 1889. Off Falmouth, June 30th, 1889. Whitsand Bay, Cornwall, August 31st, 1903; very few specimens were obtained. T. V. Hodgson, in his "Faunistic Notes" in the Journal of the Marine Biological Association for February 1904, also records this species from the neighbourhood of Plymouth; and Dr. Gough constantly procures it in his tow-net.

Fam. 11. PONTELLIDÆ.

ANOMALOCERA PATERSONI, Templeton.

1837. *Anomalocera Patersoni*, Templeton, Trans. Entom. Soc. vol. ii. p. 35, pl. v. figs. 1-3.
 1878. *Anomalocera Patersoni*, G. S. Brady, p. 75, pl. xi. figs. 1-14; pl. x. figs. 13, 14.
 1902. *Anomalocera Pattersoni*, G. O. Sars, p. 139, pls. xcii-xciv.

The only gathering in which *Anomalocera* was observed was collected off Penlee Point, Plymouth, in August 1889. Bourne recorded this species as abundant at Plymouth in 1889-89 (vol. i. (n. s.) p. 149).

LABIDOCERA WOLLASTONI (Lubbock).

1857. *Pontella Wollastoni*, Lubbock, Ann. & Mag. Nat. Hist. ser. 2, vol. xx. p. 406, pl. ix. figs. 9-11, 18; pl. x. fig. 13.
 1863. *Pontella helgolandica*, Claus, p. 208, pl. iii. figs. 3-7, pl. xxxvi. figs. 1-10, pl. xxxvii. fig. 7.
 1902. *Pontella Wollastoni*, G. O. Sars, p. 142, pls. xcv., xevi.

This species occurred in a tow-net gathering from about a mile off the Breakwater, Plymouth, August 14th, 1903. It is recorded by Dr. Bourne from near Eddystone Light-house (vol. i. (n. s.) p. 149). Dr. Gough also meets with it.

Fam. 12. PARAPONTELLIDÆ.

PARAPONTELLA BREVICORNIS (Lubbock).

1857. *Pontella brevicornis*, Lubbock, l. c. vol. xx. p. 407, pl. xi. figs. 4-8.

1878. *Parapontella brevicornis*, G. S. Brady, p. 69, pl. ix. figs. 1-16.

1903. *Parapontella brevicornis*, G. O. Sars, p. 145, pls. xcvii., xcvi.

Salcombe, July 1875. Starcross, June 1880, and in 1893 at Fowey in May; Mewstone, near Plymouth, and Whitsand Bay in August. Bourne recorded this species from the Cattewater, Plymouth, in 1889, but describes it as scarce.

Fam. 13. ACARTIIDÆ.

ACARTIA CLAUSI (Giesbrecht).

1889. *Acartia Clausi*, Giesbrecht, Atti Accad. Lincei Roma, Rend. ser. 4, vol. v. sem. 2, p. 25.

1892. *Acartia Clausi*, Giesbrecht, pp. 507 & 721, pl. xxx. figs. 2, 4, 6, 9, 13-15, 17, 28, 36, 37; pl. xlii. fig. 32; pl. xliii. figs. 3, 5, 14.

1903. *Acartia Clausi*, G. O. Sars, p. 150, pl. ci.

This is one of the more common and generally distributed of the British Marine Copepoda, but is much more frequent in off-shore gatherings than in those collected inshore. But though the gatherings under consideration were chiefly from inshore, there were several of them in which this species was observed; as, for example, in one from Salcombe collected in July 1875, in one from Falmouth collected in June 1884, and from Fowey collected in May 1903, and also in several from the neighbourhood of Plymouth.

ACARTIA DISCAUDATA, Giesbrecht.

1881. *Dias discaudatus*, Giesbrecht, Zool. Anz. vol. iv. p. 257.

1892. *Acartia discaudata*, Giesbrecht, pp. 507 & 720, pl. xxx. fig. 27, pl. xciii. figs. 2, 24.

1903. *Acartia discaudata*, G. O. Sars, p. 152, pl. cii.

This species occurred very sparingly in a sample from Salcombe collected in 1875; in one from Fowey and in another from Plymouth collected in 1903.

ACARTIA LONGIREMIS (Lilljeborg).

1853. *Dias longiremis*, Lilljeborg, De Crust. ex ordinibus tribus, p. 181, pl. xxiv. figs. 1, 13.

1892. *Acartia longiremis*, Giesbrecht, pp. 507 & 721, pl. xxx. fig. 25, pl. xliii. figs. 17, 25.

1903. *Acartia longiremis*, G. O. Sars, p. 149, pls. xcix., c.

This species was not observed by us, but Dr. Bourne has recorded it as common at Plymouth in 1888-89 (vol. i. (n. s.) p. 152).

PARACARTIA GRANI, G. O. Sars.

1904. *Paracartia Grani*, G. O. Sars, Bergens Museums Aarbog, no. 4, pp. 1-16, pls. i.-iv.

Three specimens (two females and one male) obtained in Cawsand Bay, Plymouth, have been identified with the species described by Professor Sars. The specimens were collected in moderately shallow water (5 to 6 fathoms) on August 17th, 1903. *Paracartia Grani*, as stated by Professor Sars, is nearly related to *P. dubia*, T. Scott, from the Gulf of Guinea, to which these Plymouth specimens were at first ascribed, but it is scarcely so robust, and a careful examination shows certain slight differences in the structure of some of its appendages. The learned author already referred to states that this Calanoid was found "by Dr. Gran in great abundance in an oyster-bed (Espevigpollen), situated at Tysnaes, south of Bergen," in the summer of 1903. It also occurs in a neighbouring bed (Selöpollen), but not nearly in such abundance.

Tribe II. HARPACTICOIDA.

It has been deemed best to altogether omit the breaking up of the Harpacticoida into Families in this Catalogue; because Professor G. O. Sars in his work now in the course of publication is creating an entirely new arrangement of this group. The student is therefore directed to the 'The Crustacea of Norway,' vol. v. Copepoda Harpacticoida, for the systematic distribution of the Tribe.

MISOPHRIA PALLIDA, Boeck.

1864. *Misophria pallida*, Boeck, Oversigt Norges Copepoder, p. 24.

1878. *Misophria pallida*, G. S. Brady, vol. i. p. 79, pl. xiii. figs. 11-16; pl. xviii. figs. 11, 12.

1903. *Misophria pallida*, G. O. Sars, p. 6, pls. i., ii.

This species occurred very sparingly at Salcombe in 1875, and in Plymouth Sound in August 1903.

LONGIPEDIA SCOTTI, G. O. Sars.

1880. *Longipedia coronata*, Brady (*partim*) (*nec* Claus), vol. ii. p. 6, pls. xxxiv. & xxxv. (*nec* pl. xxxiv. figs. 3, 9; pl. xxxv. figs. 1, 3, 9).

1893. *Longipedia coronata*, T. & A. Scott (*nec* Claus), Ann. Scot. Nat. Hist. (1893) p. 91, pl. ii. figs. 4-6.

1903. *Longipedia Scotti*, G. O. Sars, p. 11, pl. v. fig. 1.

Salcombe, washed from weeds, in 1875; Starcross, in June 1880, 1884, and 1904; Fowey, Cornwall, near entrance to Harbour, in May; and Plymouth Sound and Cawsand Bay, Plymouth, in August 1903, moderately frequent. Dr. G. S. Brady records *L. Scotti* from the Scilly Isles, while Dr. G. C. Bourne obtained it sparingly at Plymouth in March and April 1889, and Hodgson in December 1895.

LONGIPEDIA MINOR, T. & A. Scott.

1893. *Longipedia coronata*, var. *minor*, T. Scott, 11th Ann. Rept. Fishery Board for Scotland, pt. iii. p. 200, pl. ii. figs. 14-20.

1903. *Longipedia minor*, G. O. Sars, p. 12, pl. v. fig. 2.

Salcombe, 1875; Starcross, in 3 fathoms, June 1880; Plymouth Sound, August 12th, 1903. Common in a gathering collected at Starcross in June 1904.

CANUELLA PERPLEXA, T. & A. Scott.

1893. *Canuella perplexa*, T. & A. Scott, Ann. Scot. Nat. Hist. (1893) p. 92, pl. ii. figs. 1-3.

1903. *Canuella perplexa*, G. O. Sars, p. 17, pls. viii., ix.

This species occurred very sparingly in a gathering from 6 fathoms, Starcross, June 23rd, 1884; in another from Padstow, in May, in 2 to 3 fathoms, and in a third from Whitsand Bay, Cornwall, collected in August, 1903.

SUNARISTES PAGURI, Hesse.

1867. *Sunaristes paguri*, Hesse, Ann. des Sci. Nat. ser. 5, vol. vii. p. 205, pl. iv. figs. 11-25.

1884. *Longipedia paguri*, W. Müller, Archiv f. Naturgesch. p. 19, pl. ii. figs. 1-12.

1897. *Sunaristes paguri*, T. Scott, Ann. & Mag. Nat. Hist. ser. 6, vol. xx. p. 490, pl. xi. figs. 1-10, pl. xii. figs. 2-7.

1903. *Sunaristes paguri*, G. O. Sars, p. 15, pls. vi., vii.

This somewhat rare species was obtained at Starcross in 1884. *Sunaristes* has been taken by T. Scott in the Cromarty Firth, and on several occasions by A. Scott at the mouth of the River Mersey, and always in washings from shells inhabited by the common Hermit Crab (*Pagurus Prideauwi*).

ECTINOSOMA SARSI, Boeck.

1872. *Ectinosoma Sarsi*, Boeck, Nye Skegter og Arter af Saltvands-Copepoder, p. 45.

1880. *Ectinosoma spinipes*, G. S. Brady, vol. ii. p. 9, pl. xxxvi. figs. 1-10.
 1896. *Ectinosoma Sarsi*, T. & A. Scott, "Revision British Copepoda, Genera *Bradya* and *Ectinosoma*," Trans. Linn. Soc., Zoology, ser. 2, vol. vi. p. 427, pl. xxxvi. figs. 14, 26, 42; pl. xxxvii. figs. 1, 21, 38, 52; pl. xxxviii. figs. 10, 22, 32, 51.
 1904. *Ectinosoma Sarsi*, G. O. Sars, p. 30, pl. xvi.

This species occurred very sparingly in the gatherings from Salcombe collected in 1875; in one from Starcross collected in 1884; and in a gathering from Cawsand Bay, Plymouth, and Whitsand Bay, Cornwall, collected in August 1903. Dr. Brady also records it from the Scilly Islands.

ECTINOSOMA CURTICORNE, Boeck.

1872. *Ectinosoma curticorne*, Boeck, "Nye Skægter og Arter af Saltvands-Copepoder," Vid.-Selsk. Forh. Christ. p. 45.
 1896. *Ectinosoma curticorne*, T. & A. Scott, l. c. p. 430, pl. xxxvi. figs. 22, 30, 34; pl. xxxvii. figs. 10, 24, 41, 48; pl. xxxviii. figs. 8, 20, 35, 44.
 1904. *Ectinosoma curticone*, G. O. Sars, p. 36, pl. xx. fig. 1.

Starcross, in 5 fathoms, in 1884; Padstow, Cornwall, in 2 to 3 fathoms, in May; and at Fowey in May, and Whitsand Bay and Plymouth in August, 1903.

ECTINOSOMA ERYTHROPS, G. S. Brady.

1880. *Ectinosoma erythrops*, G. S. Brady, vol. ii. p. 12, pl. xxxvi. figs. 11-17.
 1897. *Ectinosoma erythrops*, T. & A. Scott, l. c. p. 431, pl. xxxvi. figs. 24, 31, 36; pl. xxxvii. figs. 14, 18, 37, 42; pl. xxxviii. figs. 13, 15, 39, 48.

Salcombe, 1875, rare; Padstow, Cornwall, May 15th; St. Mary's Sound, Scilly Islands, May 25th; and Plymouth, August 12th, 1903.

ECTINOSOMA HERDMANI, T. & A. Scott.

1896. *Ectinosoma Herdmani*, T. & A. Scott, l. c. p. 432, pl. xxxvi. figs. 16, 44; pl. xxxvii. figs. 3, 16, 29, 54; pl. xxxviii. figs. 7, 25, 33, 47.
 1904. *Ectinosoma Herdmani*, G. O. Sars, p. 33, pl. xviii. fig. 2.

This species was obtained very sparingly in a gathering from Starcross collected in June 1880; and in another from Plymouth Sound, collected August 12th, 1903.

ECTINOSOMA PYGMÆUM, T. & A. Scott.

1896. *Ectinosoma pygmæum*, T. & A. Scott, l. c. p. 433, pl. xxxvi. figs. 15, 41; pl. xxxvii. figs. 5, 20, 39, 43; pl. xxxviii. figs. 4, 26, 31, 55.

This species, which may be distinguished by the moderately stout fusiform setæ of the fifth thoracic feet of the female, was obtained very sparingly in Fowey Harbour, Cornwall, on May 7th, 1903.

ECTINOSOMA MELANICEPS, Boeck.

1864. *Ectinosoma melaniceps*, Boeck, Oversigt Norges Copepoder, p. 30.
 1880. *Ectinosoma melaniceps*, G. S. Brady, vol. ii. p. 11, pl. xl. figs. 17-20.
 1897. *Ectinosoma melaniceps*, T. & A. Scott, l. c. p. 434, pl. xxxvi. figs. 13, 28, 45; pl. xxxvii. figs. 11, 22, 40, 49; pl. xxxviii. figs. 2, 21, 41, 46.
 1904. *Ectinosoma melaniceps*, G. O. Sars, p. 34, pl. xix. fig. 1.

Moderately frequent in gatherings from Salcombe, July 1875; Exmouth from between tide-marks, June 1884; and the mouth of the Yealm, August 1889. It has more recently been obtained in gatherings from Fowey, Cornwall, the Scilly Islands, and Plymouth.

Ectinosoma melaniceps is a form that appears to be moderately common and generally distributed round the British Islands.

ECTINOSOMA NORMANI, T. & A. Scott.

1896. *Ectinosoma Normani*, T. & A. Scott, l. c. p. 435, pl. xxxvi. figs. 21, 29, 39; pl. xxxvii. figs. 12, 26, 34, 51; pl. xxxviii. figs. 5, 18, 42, 45.
 1904. *Ectinosoma Normani*, G. O. Sars, p. 35, pl. xix. fig. 2.

This moderately distinct species was observed in gatherings from Salcombe and Plymouth. It was not uncommon in two of those from Salcombe, one collected in June and one in July 1875; and it occurred in no fewer than ten of the gatherings from Plymouth, collected between the 11th and 31st of August, 1903. The following are some of the localities where these gatherings were collected:—near Chequer Buoy, Cawsand Bay, near Drake Island, Mill Bay, and three miles N.W. of Eddystone Lighthouse.

MICROSETELLA NORVEGICA (Boeck).

1864. *Setella norvegica*, Boeck, Oversigt Norges Copepoder, p. 57.
 1873. *Microsetella atlantica*, Brady & Robertson, Ann. & Mag. Nat. Hist. ser. 4, vol. xii. p. 130, pl. ix. figs. 11-16.

1880. *Ectinosoma atlanticum*, G. S. Brady, vol. ii. p. 13, pl. xxxviii. figs. 11-19.
 1897. *Ectinosoma atlanticum*, T. & A. Scott, l. c. p. 437, pl. xxxvi. figs. 17, 40; pl. xxxvii. figs. 6, 23, 35, 50; pl. xxxviii. figs. 11, 16, 38, 53.
 1904. *Microsetella norregica*, G. O. Sars, p. 44, pl. xxiv.

Starcross, in five fathoms, June 23rd, 1884; Plymouth, August 22nd, 1903, rare. This species, which is sometimes abundant in the open sea, is not commonly met with inshore.

BRADYA TYPICA, Boeck.

1872. *Bradya typica*, Boeck, Nye Slægter og Arter af Saltvands-Copepoder, p. 15.
 1880. *Bradya typica*, G. S. Brady, vol. ii. p. 17, pl. xxxviii. figs. 1-10.
 1897. *Bradya typica*, T. & A. Scott, l. c. p. 421, pl. xxxv. figs. 1, 11, 14, 22, 26, 32, 39, 44; pl. xxxvi. figs. 1, 12.
 1904. *Bradya typica*, G. O. Sars, p. 46, pl. xxv.

Salcombe, June 1875; Cattewater, Plymouth, August 1889; and among weeds at low water, Plymouth, August 22nd, 1903. Dr. Brady records it from the Scilly Islands, off Porcraza in 20 fathoms.

PSEUDOBADYA HIRSUTA (T. & A. Scott).

1896. *Bradya hirsuta*, T. & A. Scott, l. c. p. 423, pl. xxxv. figs. 2, 8, 17, 19, 23, 28, 34, 40, 47; pl. xxxvi. figs. 2, 7.

Salcombe, 1875, one specimen in a surface tow-net gathering. Three specimens in a gathering from Starcross collected in June 1880, and one in a gathering from the same place collected in June 1884. Prof. G. O. Sars (*op. cit.*) considers that this and the following species differ sufficiently as to form the type of a new genus which he calls *Pseudobradya*.

PSEUDOBADYA SIMILIS (T. & A. Scott).

1896. *Bradya similis*, T. & A. Scott, l. c. p. 424, pl. xxxv. figs. 3, 7, 16, 27, 33, 41, 48; pl. xxxvi. figs. 3, 10.
 1904. *Pseudobradya similis*, G. O. Sars, p. 42, pl. xxiii. fig. 2.

A single specimen was obtained in a gathering from Starcross collected in June 1880, and another in a gathering from the same place in June 1884.

PSEUDOBADYA FUSCA (T. & A. Scott).

1896. *Bradya fusca*, T. & A. Scott, l. c. p. 424, pl. xxxv. figs. 6, 12, 18, 20, 30, 37, 43, 45; pl. xxxvi. figs. 6, 8.

Salcombe, June 30th, 1875, rare; and near Chequer Buoy, Plymouth, August 14th, rare.

PSEUDOBADYA MINOR (T. & A. Scott).

1896. *Badya minor*, T. & A. Scott, l. c. p. 425, pl. xxxv. figs. 5, 9, 13, 21, 24, 31, 35, 42; pl. xxxvi. figs. 5, 9.

1904. *Pseudobadyla minor*, G. O. Sars, p. 41, pl. xxii. fig. 2.

Fowey Harbour, Cornwall, and St. Mary's, Scilly Islands, in May 1903; and at the following places in August:—near Drake Island, the River Tamar (in brackish water), and in Mill Bay, Plymouth. This is a small species and easily overlooked, and it may therefore turn out to be more frequent than hitherto it has appeared to be.

ZOSIME TYPICA, Boeck.

1872. *Zosime typica*, Boeck, Nye Slægter og Arter af Saltvands-Copepoder, p. 14.

1880. *Zosime typica*, Brady, vol. ii. p. 15, pl. xxxix. figs. 1-12.

1903. *Zosime typica*, G. O. Sars, p. 27, pl. xv.

Zosime was obtained very sparingly in a gathering from Jenny Cliff Bay, Plymouth Sound, collected August 14th, 1903.

TACHIDIUS DISCIPES, Giesbrecht.

1880. *Tachidius brevicornis*, G. S. Brady, vol. ii. p. 20, pl. xxxvii.

1882. *Tachidius discipes*, Giesbrecht, Die freilebenden Copep. d. Kieler Föhrde, p. 108, pl. ii. fig. 4; pl. iv. figs. 25, 28; pl. v. fig. 4; pl. vii. fig. 15; pl. viii. figs. 8, 9, 46; pl. ix. fig. 18; pl. x. figs. 11, 31; pl. xi. fig. 12; pl. xii. figs. 23, 23.

Salcombe, July 9th, 1875, rare. Padstow and Fowey, Cornwall, not common, May 1903. Exminster, Devon, September 10th, 1903. Pond at St. Mary's, Scilly Islands (*Brady*).

TACHIDIUS LITTORALIS, Poppe.

1881. *Tachidius littoralis*, Poppe, Abh. d. Naturw. Ver. Bremen, vol. vii. p. 149, pl. vi. figs. 1-12.

1892. *Tachidius crassipes*, T. Scott, 10th Annual Report Fishery Board of Scotland, p. 250, pl. viii. figs. 14-27.

Starcross, Devon, June 23rd, 1884, rare. River Tamar, Plymouth, August 17th, 1903.

* EUTERPINA ACUTIFRONS (Dana).

1849. *Harpacticus* (?) *acutifrons*, Dana, Proc. Amer. Acad. Boston, vol. i. pp. 150-154.

1863. *Eutерpe gracilis*, Claus, p. 110, pl. xiv. figs. 1-13.

1880. *Eutерpe gracilis*, G. S. Brady, vol. ii. p. 22, pl. xl. figs. 1-6.

* *Eutерpina*, Norman. See Norman on "New Generic Names," Ann. & Mag. Nat. Hist. ser. 7, vol. xi. p. 368 (April, 1903).

Starcross, June 23rd, 1884; Falmouth, June 30th, 1889; and in gatherings from the following places collected in May and August, 1903:—Padstow, Cornwall, very rare; $2\frac{1}{2}$ miles off the Breakwater, Plymouth; Plymouth Sound; and near Mewstone Ledge, Plymouth.

CLYTEMNESTRA *ROSTRATA* (G. S. Brady).

1883. *Goniophyllus rostratus*, G. S. Brady, Rept. 'Challenger' Copepoda, p. 107, pl. xlii. figs. 9-16.

1892. *Clytemnestra rostrata*, Giesbrecht, pp. 566 & 734, pl. xlv. figs. 19, 20, 22, 25, 26, 31, 33.

This species was found by A. M. N. in a gathering from the Cattewater, Plymouth, collected August 1889. This appears to be the first British capture of the species. It has since been taken in the tow-net by Dr. Gough near the Eddystone and elsewhere off the coast.

ROBERTSONIA *TENUIS* (Brady & Robertson). (Pl. XX. figs. 9-11; Pl. XXI. fig. 6.)

1876. *Ectinosoma tenue*, Brady & Robertson, Rep. Brit. Assoc. (1875) p. 196.

1880. *Robertsonia tenuis*, Brady, vol. ii. p. 25, pl. xli. figs. 1-14.

Robertsonia tenuis is a small but moderately robust species, with somewhat hispid segments.

The antennules of the female (Pl. XX. fig. 9) are stout and composed of only five joints, and furnished with numerous stout setæ, several of which are plumose.

The antennæ have the secondary branches three-jointed, but the middle joint is very small.

The first four pairs of thoracic feet have both branches three-jointed. The inner branches of the first pair are only slightly longer than the outer, and the first joint is more robust than either of the next two; the outer branches are moderately stout. The drawing (Pl. XX. fig. 11) shows the form and arrangement of the armature of this pair.

In the other three pairs the outer branches are longer than the inner ones.

The fifth pair (Pl. XXI. fig. 6) are foliaceous and two-jointed; the primary joint is broadly subtriangular and provided with fine setæ on the distal half of the inner margin and apex; the secondary joint, which is broadly ovate, scarcely reaches beyond the extremity of the primary joint and bears six setæ arranged as shown in the drawing.

The furcal joints are very short.

In gatherings from Salcombe, 1875, and in Plymouth Sound, near Chequer Buoy and Jenny Cliff Bay, in August 1903.

*TEGASTES FALCATUS, Norman.

1869. *Amymone falcata*, Norman, "Last Report Dredging Shetland Isles," Brit. Assoc. Report for 1868, p. 296.
 1872. *Amymone rubra*, Boeck, Nye Skegter og Arter af Saltvands-Copepoder, p. 16.
 1880. *Amymone sphaerica*, G. S. Brady, vol. ii. p. 28 (not *A. sphaerica*, Claus).
 1903. *Amymone rubra*, G. S. Brady, Trans. Nat. Hist. Soc. Northumb., Durham and Newcastle, new ser. vol. i. p. 3, pl. i. fig. 13.
 1904. *Tegastes falcatus*, G. O. Sars, p. 69, pl. xli.

Professor Brady in his Monograph made *A. falcata*, Norman, a synonym of *A. sphaerica*, Claus. In a recent paper he has retracted the opinion that the species found by him is that of Claus, and has adopted the name *A. rubra*, Boeck; but Norman's *A. falcata*, in the description of which the specific differences from those of *A. sphaerica* were pointed out, has precedence over the *A. rubra*, Boeck.

One or two specimens of *Tegastes falcatus* were observed in gatherings from Fowey, Cornwall, near Eddystone Lighthouse, and Plymouth Sound.

PARATEGASTES SPHERICUS (Claus).

1863. *Amymone sphaerica*, Claus, p. 114, pl. xx. figs. 1-9.
 1894. *Amymone nigrans*, T. & A. Scott, Ann. & Mag. Nat. Hist. ser. 6, vol. xiii. p. 157, pl. viii. figs. 1-7.
 1904. *Parategastes sphericus*, G. O. Sars, p. 73, pl. xliii.

Many specimens of this small dark-coloured species were taken by A. M. N. at Exmouth, between tide-marks, in June 1884. It has also been observed in gatherings recently collected at St. Mary's, Scilly Islands, and in the neighbourhood of Plymouth. *T. sphericus* appears to be more littoral in its distribution than *T. falcatus*.

STENHELIA HISPIDA, G. S. Brady.

1880. *Stenhelium hispida*, Brady, vol. ii. p. 32, pl. xlii. figs. 1-14.

Salcombe, July 1875. Mouth of the River Yealm, August 1889. Plymouth near Drake Island, near Chequer Buoy, and in Mill Bay, August 1903. Rare in all these gatherings.

STENHELIA IMA (G. S. Brady).

1872. *Canthocamptus imus*, Brady, Nat. Hist. Trans. Northumb. and Durham, vol. iv. p. 436, pl. xix. figs. 1-5.
 1880. *Stenhelium ima*, Brady, vol. ii. p. 35, pl. xliii. figs. 1-14.

Very sparingly in a gathering from Salcombe 1875, and in

* *Tegastes*, Norman. See Norman on "New Generic Names," Ann. & Mag. Nat. Hist. ser. 7, vol. xi. p. 368 (1903).

another from Cattewater, Plymouth, 1889. Dr. G. S. Brady has recorded the same species from St. Mary's, Scilly Islands.

STENHELIA REFLEXA, T. Scott.

1895. *Stenhelix reflexa*, T. Scott, 13th Ann. Rept. Fishery Board for Scotland, pt. iii. p. 166, pl. iii. figs. 1-9.

One or two specimens belonging apparently to this species were observed in a Salcombe gathering collected June 30th, 1875.

STENHELIA PYGMÆA, Norman & T. Scott. (Pls. X. figs. 1-3 ; XI. figs. 1, 2 ; XV. fig. 1 ; XVI. fig. 1 ; XVIII. fig. 1.)

1905. *Stenhelix pygmæa*, Norman & T. Scott, Ann. & Mag. Nat. Hist. ser. 7, vol. xv. p. 284.

Description of the female.—The body is stout, but tapers slightly towards the posterior end. The specimen represented by the drawing (Pl. X. fig. 1) measures only .36 millimetre in length (about $\frac{1}{70}$ of an inch), and it carries a single, moderately large ovisac. The forehead is produced into a small though distinct rostrum.

The antennules are short and eight-jointed ; the first two joints are large, but the fourth to the seventh are very small ; the third and the last joints, which are subequal, are also small, but larger than those between them (Pl. XV. fig. 1). The formula shows approximately the proportional lengths of the various joints :—

Proportional lengths of the joints ..	20	20	9	4	3	3	4	11
Numbers of the joints	1	2	3	4	5	6	7	8

The antennæ are furnished with small three-jointed secondary branches (Pl. X. fig. 2).

The basal joint of the mandible-palp is moderately stout and bears two small branches (Pl. X. fig. 3).

The second maxillipeds, which are not very stout, are provided with slender and elongated terminal claws (Pl. XVIII. fig. 1).

The inner branches of the first pair of thoracic feet are slender and considerably longer than the outer branches ; the first joint is only slightly larger than the third, while the second is rather more than half the length of that which precedes it. The outer branches reach to near the end of the second joint of the inner branches (Pl. XVI. fig. 1).

The next three pairs of thoracic feet are also slender. The

fourth pair, represented by the drawing (Pl. XI. fig. 1), has the outer and inner branches of nearly the same length, but the outer is rather the longer one.

The fifth pair, which are small, have the basal joint broadly subtriangular, but with the apex truncated and provided with three setæ of nearly equal length, and there is also a seta of about the same length as the others near the lower end of the inner margin (Pl. XI. fig. 2); secondary branch narrow subcylindrical, breadth scarcely equal to half the length, the apex is slightly produced to form the base for a slender seta, a slender seta springs from near the distal end of the inner margin, there are about four setæ on the outer margin, the two lower ones being stouter than the others.

The furcal joints are very small.

Habitat. Near Eddystone Lighthouse, collected August 31st, 1903; apparently not common; no males have been observed.

Remarks. The small size of the female, the peculiar structure of the antennules, the structure of the first pair of thoracic feet, and the form and armature of the fifth pair distinguish this species from any other known to us.

STENHELIA SIMULANS, Norman & T. Scott. (Pls. X. fig. 6; XIII. fig. 8; XIV. fig. 4; XVII. fig. 1; XXI. fig. 1.)

1905. *Stenhelia simulans*, Norman & Scott, Ann. & Mag. Nat. Hist. ser. 7, vol. xv. p. 255.

The form described under this name has a general resemblance to *Stenhelia ima*, G. S. Brady, both in the general figure of the species, and in some of its structural details, so that without dissection it may readily be mistaken for that species.

The female antennules, which are eight-jointed, are moderately stout, but scarcely so elongated as those of *S. ima*; the first four joints taken together are equal to about twice the entire length of the last four; the length of the first, second, and fourth joints is nearly the same, but the second is rather the longer one; the third, which is nearly as long as the end joint, is scarcely half the length of the joint that precedes it; the fifth, sixth, and seventh joints are small, the fifth being the smallest and the seventh the longest of the three, as shown by the drawing (Pl. XXI. fig. 1). The proportional lengths of all the joints are approximately given in the formula:—

Proportional lengths of the joints. .	20	26	12	20	6	7	9	14
Numbers of the joints.	1	2	3	4	5	6	7	8

The antennæ are nearly as in *S. ima*, and the secondary branches are small and three-jointed (Pl. X. fig. 6).

The second maxillipeds are moderately stout; the second joint, which is about twice as long as broad, is furnished with a small series of minute bristles arranged in a horizontal line near the middle and on the lateral aspect of the joint, a small but distinct seta also springs from the inner margin of the joint as shown in the drawing; the end joint is short and narrow, and forms the base of a moderately slender elaw which is furnished with two setæ near its proximal end and on the inner aspect (Pl. XIII. fig. 8).

The first pair of thoracic feet are moderately slender, and the outer branches reach to about the end of the first joint of the inner branches; the spines on the exterior aspect of the outer branches are slender and elongated, and the outer edge of each joint is fringed with minute cilia, and the first and second joints are also furnished with a number of delicate cilia on their inner margins. The length of the first joint of the inner branches is about one and one-fourth times that of the second and third combined, while the end joint is fully twice as long as the middle one (Pl. XIV. fig. 4).

The fifth pair are somewhat similar to those of *Stenhelia ima*, but the secondary joints are proportionally broader, the width being equal to about half the length; there is also a slight difference in their armature (Pl. XVII. fig. 1).

Habitat. Near Chequer Buoy in the neighbourhood of Plymouth, August 14th, 1903.

Remarks. Though the form just described has a rather close resemblance to *Stenhelia ima*, there are differences between them which appear to us to be sufficiently important to justify its separation. The more important of these are, a difference in the proportional lengths of the joints of the antennules; the greater proportional length of the outer branches of the first pair of thoracic feet in relation to the first joint of the inner branches; and the greater width in relation to the length of the secondary joints of the fifth pair.

STENHELIA NEGLECTA, Norman & T. Scott. (Pls. X. fig. 4; XI. fig. 3; XIII. fig. 2; XIV. fig. 2; XV. figs. 2, 12; XVIII. fig. 2; XXI. fig. 8.)

1905. *Stenhelia neglecta*, Norman & Scott, Ann. & Mag. Nat. Hist. ser. 7, vol. xv. p. 286.

Description of the female.—Body moderately slender and elongated (Pl. XIII. fig. 2). Length of the specimen represented by the drawing .8 mm. ($\frac{1}{31}$ of an inch).

Rostrum moderately elongated and slender. Antennules moderately slender and composed of eight joints, but the last four taken together are only about half the entire length of the first four, the fifth, sixth, and seventh joints are small, but the fifth is the smallest (Pl. XV. fig. 2). The formula shows approximately the proportional lengths of all the joints:—

Proportional lengths of the joints ..	14	8	6	10	2	4	3	7
Numbers of the joints	1	2	3	4	5	6	7	8

The secondary branches of the antennæ are small, and appear to be three-jointed, but the middle joint is minute and somewhat indistinct (Pl. X. fig. 4).

The first pair of thoracic feet are slender, and the inner branches moderately elongated; the first joint of the inner branch is about equal to the entire length of the outer one, while the second and third joints are together about equal to half the length of the first joint, but the second is very short (Pl. XI. fig. 3).

The next three pairs are also slender and elongated. In the fourth pair the inner branches are somewhat shorter than the outer, and a moderately long plumose seta springs from about the middle of the inner margin of each of the three joints, and two similar setæ together with a small spine spring from the apex of the third joint (Pl. XIV. fig. 2).

The fifth pair are of moderate size; the inner portion of the primary joint is elongated, it has a somewhat narrow triangular outline, and is furnished with three setæ and two moderately stout spines; the two spines and one of the setæ are situated on the inner margin, while the other two setæ spring from the apex of the joint. The secondary joint is moderately narrow, subcylindrical for about three-fourths of its length, then tapers obliquely to the pointed apex; this joint extends considerably beyond the extremity of the primary one, and carries five setæ, two of which are situated on the distal half of the inner margin, two on the outer margin, and one at the apex (Pl. XVIII. fig. 2).

The furcal joints are very short (Pl. XXI. fig. 8).

Habitat. Salcombe, collected in 1875; and in Mill Bay, Plymouth, among Hydrozoa, collected in August 1903.

Remarks.—*Stenhelia neglecta* resembles *S. ina* in its general appearance and structure, but it may be readily distinguished by the slender first pair of thoracic feet, and especially by the peculiar form of the fifth pair in the female.

STENHELIA VARIANS, Norman & T. Scott. (Pls. X. fig. 5; XIV. fig. 13; XV. figs. 4, 14; XVI. fig. 3; XVII. fig. 2.)

1905. *Stenhelius varians*, Norman & Scott, Ann. & Mag. Nat. Hist. ser. 7, vol. xv. p. 287.

Description of the female.—This *Stenhelius* closely resembles *S. neglecta* just described, both as to its size and the structure of its appendages, and might easily be confounded with it; but a critical examination reveals certain differences, of which the following are the more important.

The antennules are elongated as in *S. neglecta*, and are composed of eight joints; the entire length of the first four joints is scarcely three times the entire length of the last four; the second joint, which is the longest, is more than double the length of the third joint, but in *S. neglecta* the length of the second joint is to that of the third as four is to three. The fourth joint of the species under consideration is about one and a half times as long as the third one; the fifth, sixth, and seventh joints are subequal and very small, while the end joint is about equal to the combined lengths of the sixth and seventh (Pl. XV. fig. 4). The formula shows approximately the proportional lengths of the various joints:—

Proportional lengths of the joints	..	8	17	8	12	3	4	4	7
Numbers of the joints	.....	1	2	3	4	5	6	7	8

The secondary joints of the antennæ are three-jointed, but the middle one is small (Pl. X. fig. 5).

The mandibles and other appendages of the cephalon and also the first pair of thoracic feet are similar to those of *Stenhelius neglecta*.

The fifth pair also resemble those of that species, but differ somewhat in the form and armature of both the primary and secondary joints. The primary joints terminate in a narrow apex; there are three short and subequal setæ on the inner margin and two slender terminal setæ of unequal length; the space which separates the two terminal setæ from the other three is distinctly greater than that which separates these three from one another. The secondary joints are subovate in outline, and nearly twice as long as broad, the outside edge is nearly straight, but the inner is distinctly rounded; a seta springs from near the middle of the outer margin and four from the angularly rounded extremity of the joint as shown by the drawing (Pl. XVII. fig. 2).

No males of this form have been observed.

Habitat. Fowey, Cornwall, outside the harbour, collected May 12th, 1903; apparently not common.

STENHELIA LONGIROSTRIS, Norman & T. Scott. (Pls. XI. fig. 4; XII. fig. 3; XIV. fig. 3; XV. figs. 3, 13; XVI. fig. 2.)

1905. *Stenhelium longirostris*, Norman & Scott, Ann. & Mag. Nat. Hist. ser. 7, vol. xv. p. 288.

It resembles *Stenhelium reflexa*, T. Scott, in its general appearance and in the structure of its appendages, but is distinctly smaller.

The specimen represented by the drawing (Pl. XII. fig. 3) measures about .88 mm. (about $\frac{1}{28}$ of an inch). The body is subcylindrical and the forehead is produced into an elongated and rather slender rostrum.

The antennules of the female are composed of eight joints; the first joint is slightly longer than the second and nearly twice as long as the third joint; the fourth joint, which is rather longer than the third, has the upper distal angle produced forward to the end of the next joint and bears a long sensory filament; the fifth, sixth, and seventh joints are small and about equal in length, while the ultimate one is nearly twice as long as that which immediately precedes it (Pl. XV. fig. 3). The annexed formula shows approximately the proportional lengths of the various joints:—

Proportional lengths of the joints ..	13	11	7	9	3	3	3	5
Numbers of the joints	1	2	3	4	5	6	7	8

The secondary branches of the antennæ are three-jointed and of moderate length.

The second maxillipeds are furnished with two moderately long setæ on the distal extremity of the first joint; the second joint is narrow and subcylindrical, with a longitudinal row of spinules on its inner aspect, a small seta springs from near the middle and another from near the end of the inner margin; the slender spiniform terminal claw springs from the end of a narrow and moderately long basal part, as shown in the figure (Pl. XV. fig. 13). The other cephalic appendages are nearly as in *S. reflexa*.

The first four pairs of thoracic feet are all moderately slender, and both branches are three-jointed. In the first pair the first joint of the inner branch is about as long as the entire length of the outer branch, the second joint is small, being only about half the length of the third joint, while the second and third are together about equal to two-thirds the length of the first joint. The joints of the outer branches are subequal in length (Pl. XVI. fig. 2). The next three pairs are each similar to the same pair in *Stenhelium reflexa* (Pl. XIV. fig. 3). Each of the fifth pair has the

inner produced portion of the basal joint narrowly subtriangular with the apex bluntly rounded and reaching to about the middle of the secondary joint; the inner margin bears three setæ, the two upper are short and of nearly equal length, but the lower one is longer; the two apical setæ are of unequal length and rather slender. The secondary joint is moderately elongated, being fully twice as long as broad, it is broadest near the proximal end and tapers gradually to the truncate and somewhat angular apex; a small seta springs from near the distal end of the inner margin and two of moderate length from the truncate end; there are three small setæ on the lower half of the outer margin, the one nearest the distal end, which is the smallest of the three, is provided with a peculiarly thickened base, as shown by the drawing (Pl. XI. fig. 4).

The furcal joints are very short.

No males of this form have been observed.

Habitat. Salcombe, collected 1875.

PARASTENHELIA ANGLICA, Norman & T. Scott. (Pls. X. figs. 10, 11; XIII. figs. 4, 9; XIV. fig. 6; XVI. fig. 4; XVII. fig. 4; XXI. fig. 2.)

1905. *Parastenhelia anglica*, Norman & Scott, Ann. & Mag. Nat. Hist. ser. 7, vol. xv. p. 289.

Description of the female.—The form of this species bears a close resemblance to that of some species of *Stenhelia*; the body, which is moderately stout, tapers slightly towards the posterior end; the rostrum is narrow and elongated, and the furcal joints are very short (Pl. XIII. fig. 4). The specimen represented by the drawing measures .65 mm. in length (about $\frac{1}{40}$ of an inch).

The antennules, which are moderately stout and elongated, are composed of nine joints; the first four joints are together more than twice the entire length of the remaining five joints; the second joint is considerably longer than the third or fourth, which are subequal; all the other five joints are small, but the terminal one is nearly as long as the two preceding joints taken together (Pl. XXI. fig. 2). The proportional lengths of the various joints are shown approximately by the formula:—

Proportional lengths of the joints	25.	46.	34.	34.	12.	10.	8.	6.	16
Numbers of the joints	1	2	3	4	5	6	7	8	9

The secondary branches of the antennæ are three-jointed and moderately elongated, and the middle joint is about as long as the end one (Pl. X. fig. 10).

The mandibles resemble those of *Stenhelia*; the basal joint of the mandible-palp, which appears to be club-shaped, expands towards the distal end and bears two small uniarticulate branches, the distal branch being more elongated than the other (Pl. X. fig. 11).

The second maxillipeds are somewhat similar to those of *Stenhelia hispida*, G. S. Brady, but there appears to be a slight difference in the armature of the second joint and in the length of the terminal claw (Pl. XIII. fig. 9).

The first pair of thoracic feet have the inner branches three-jointed and very slender and elongated, being equal to about twice the entire length of the three-jointed outer branches; the first joint about half as long as the second, but the end joint is small; a plumose seta springs from the inner distal angle of the first joint, while the end joint is provided with two terminal claw-like spines of unequal length. The outer branches, which reach to about the middle of the inner ones, are moderately stout, the end joint is much smaller than the first or second, which are subequal; the armature of the outer branches is somewhat similar to that of the same branches in *Stenhelia ima* (Pl. XVI. fig. 4).

The next three pairs are slender and moderately elongated. The fourth pair, which are represented by the drawing (Pl. XIV. fig. 6), have the outer branches about a third longer than the inner ones; the first and second joints are each furnished with a small spine near the distal end of the outer margin and with a plumose seta on the inner margin, while two spines, one small and one long and slender, and also a moderately long seta, spring from the extremity of the third joint. The first and second joints of the inner branches have each a seta on the inner margin, but the end joint is provided with two setae on the inner margin and with a small spine and two setae at the apex, as shown in the drawing already referred to.

The fifth pair have a small primary (or basal) joint which is of a subtriangular form and bears five setae on the lower half of the inner margin and apex. The secondary joint is elongated and subcylindrical, but the distal half of the outer edge slopes gradually to the narrow extremity; the inner margin, on the other hand, is nearly straight from base to apex; a single seta springs from near the lower end of the inner margin and five from the outer margin and apex, as shown in the drawing (Pl. XVII. fig. 4).

Habitat. Outside Fowey Harbour, Cornwall, in four to five fathoms; collected May 9th, 1903.

Remarks. The form now described differs from *Parastenhelia*, A. Scott, in the inner branches of the first pair of thoracic

feet being apparently three-jointed instead of consisting of only two joints; but with this exception the present form agrees so closely with the two species already described by that author that we have no hesitation in ascribing it to the same genus. No males of the species just described have been observed, and only one or two females were noticed.

AMEIRA SIMPLEX, Norman & T. Scott. (Pls. X. figs. 7-9; XII. fig. 4; XIII. fig. 3; XIV. fig. 5; XVII. fig. 3; XXI. fig. 7.)

1905. *Ameira simplex*, Norman & Scott, Ann. & Mag. Nat. Hist. ser. 7, vol. xv. p. 291.

Description of the female.—Length of the specimen represented by the drawing (Pl. XIII. fig. 3) .64 mm. ($\frac{1}{40}$ of an inch). Body somewhat slender, with the forehead produced into a moderately prominent rostrum.

Antennules short, not very stout, and composed of eight joints; the first two joints are longer and rather more robust than the others, the next four are short and subequal, the terminal joint is small but is rather longer than the penultimate one. The formula indicates approximately the proportional lengths of the various joints (Pl. XII. fig. 4):—

Proportional lengths of the joints ..	15	15	9	8	6	7	3	5
Numbers of the joints	1	2	3	4	5	6	7	8

Antennæ small; secondary joint short and uniaarticulate, and provided with a few terminal setæ (Pl. X. fig. 7).

Mandible small; the mandible-palp simple and one-branched (Pl. X. fig. 8). The second maxilliped is represented by Pl. X. fig. 9.

The first pair of thoracic legs have elongated and slender inner branches; the second joint of the inner branch is about half as long as the first, but the first and third are nearly of equal length, the third being rather the smaller of the two. The outer branch, which consists of three subequal joints, reaches scarcely to the end of the second joint of the inner branch.

The next three pairs are also moderately slender, but have the outer branches rather longer than the inner. Figure 5, Plate XIV., represents the fourth pair.

The fifth pair are small; the produced inner portion of the primary joint is subcylindrical, the apex of which is obliquely truncate and furnished with five setæ, the second one from the outside much longer than the others. The secondary joint is subovate, its length being equal to about twice the width at the proximal end; the sides, which

are only slightly rounded, converge gradually towards the narrowly rounded apex; the joint is furnished with five setæ, four of which spring from the distal extremity and one from the proximal half of the outer margin, the marginal seta and the one next the outermost of the terminal setæ are small, but the other three are elongated (Pl. XVII. fig. 3).

The furcal joints are fully half as long as the last abdominal segment.

Habitat. Estuary of the Exe, near Starcross, June 9th, 1884; apparently rare.

Remarks. The form just described resembles somewhat the *Ameira exigua*, T. Scott, and may only be a variety of that species; but it differs to some extent in the proportional lengths of the joints of the antennules, in the armature of the mandible-palp, in the outer branches of the first pair of thoracic feet being as long as the first two joints of the inner branches, and in the joints of the inner branches being different in their proportional lengths. Moreover, the armature of the fifth pair is distinctly different in the two species.

AMEIRA LONGIPES, Boeck.

1864. *Ameira longipes*, Boeck, Oversigt af Norges Copepoder, p. 49.

1880. *Ameira longipes*, Brady, vol. ii. p. 37, pl. liii. figs. 1-10.

Salcombe, June 1875. Between tide-marks at Exmouth, June 1884. Plymouth Sound, near Chequer Buoy; three miles north-west of Eddystone Lighthouse, and one or two other places near Plymouth, August 1903.

AMEIRA LONGICAUDATA, T. Scott.

1892. *Ameira longicaudata*, T. Scott, 10th Rept. Fishery Board for Scotland, pt. iii. p. 250, pl. ix. figs. 1-18.

Rare in a gathering from outside the harbour at Fowey, Cornwall, in 4 to 5 fathoms, bottom coarse sand, May 9th, 1903.

AMEIRA GRACILIS, A. Scott.

1896. *Ameira gracilis*, A. Scott, Lancashire Sea-Fisheries Lab. Rept. for 1895, p. 37, pl. ii. figs. 1-11.

One or two specimens of this *Ameira* occurred in the same gathering with the last species.

AMEIRA EXIGUA, T. Scott (var.).

1894. *Ameira exigua*, T. Scott, 12th Rept. Fishery Board for Scotland, pt. iii. p. 243, pl. vi. figs. 15-23.

A form closely resembling *Ameira exigua*, T. Scott, but

differing slightly in the fifth pair of thoracic feet of the female, was obtained in a gathering from Starcross, collected in June 1880, and in other gatherings collected near Plymouth in August 1903.

NITOCRA HIBERNICA (G. S. Brady).

1880. *Canthocamptus hibernicus*, G. S. Brady, Monogr. Brit. Copep. vol. ii. p. 52, pl. xlv. figs. 1-12.

1893. *Nitocra hibernica*, Schmeil, ii. p. 78, pl. vii. figs. 1-16.

This species was obtained by Canon Norman in Exeter Canal, Devon, on June 29th, 1904.

NITOCRA TAU, Giesbrecht.

1881. *Nitocra tau*, Giesbrecht, "Die freileb. Copep. d. Kieler Föhrde,"

IV. Bericht d. Commiss. z. Untersuch. d. deutsch. Meere in Kiel (Separatabdruck), p. 171, pls. i. figs. 9, 13; iii. 13; iv. 2, 11, 19; v. 7; vi. 5; vii. 19; viii. 4; ix. 14, 23; xi. 14, 15 b, 35, 36; xii. 19, 20.

Salcombe, 1875. Starcross, 1880 and 1884. Exmouth, between tide-marks, June 1884. Cattewater, Plymouth, 1889. Rock-pools at and above high-water mark, Plymouth, August, and Salcombe, September, 1903. This species, though observed in several gatherings, was somewhat scarce in all of them. New to Britain.

NITOCRA OLIGOCHÆTA, Giesbrecht.

1881. *Nitocra oligochaeta*, Giesb. l. c. p. 116, pls. i. figs. 2, 15; iii. 17; iv. 3, 10; v. 10; vi. 3; vii. 17; viii. 3; ix. 15; x. 15, 24; xi. 15, 21, 33, 34; xii. 7-9.

Rare in a gathering from St. Mary's Sound, Scilly Islands, collected in May 1903. Salcombe, rare. New to Britain.

DANIELSSENIA TYPICA, Boeck.

1872. *Danielssenia typica*, Boeck, Nye Slægter og Arter af Saltvands-Copepoder, p. 45.

1876. *Zosime spinulosa*, Brady & Robertson, Brit. Assoc. Rept. (1875) p. 196 (not described).

1880. *Jonesiella spinulosa*, Brady, vol. ii. p. 41, pl. xlviii. figs. 14-18; pl. xlix. figs. 14, 15.

A gathering from 6 fathoms near Duke Buoy, Plymouth, in August 1889, consisted chiefly of *Danielssenia typica*, and is the only one in which this species has been observed.

DANIELSSENIA FUSIFORMIS (Brady & Robertson).

1876. *Zosime fusiformis*, Brady & Robertson, Brit. Assoc. Rept. (1875) p. 196 (not described).

1880. *Jonesiella fusiformis*, Brady, vol. ii. p. 39, pl. xlviii. figs. 1-13.

Dr. G. S. Brady records this species as occurring "plenti-

fully in a dredging made off Porcressa Bay, Scilly Islands, in twenty fathoms on a bottom of hard sand.”

THOMPSONULA HYÆNÆ (I. C. Thompson).

1889. *Jonesiella hyænæ*, I. C. Thompson, Proc. Biol. Soc. Liverpool, vol. viii. p. 193, pl. ix. figs. 1-10.

1893. *Jonesiella hyænæ*, T. Scott, 11th Annual Rept. Fishery Board for Scotland, p. 202, pl. iii. figs. 1-6.

1905. *Thompsonula hyænæ*, T. Scott, Ann. & Mag. Nat. Hist. ser. 7, vol. xvi. p. 571 (November 1905).

This interesting species, which was added to the British fauna by the late I. C. Thompson of Liverpool, has been obtained in two localities within the area of this work, namely: St. Mary's, Scilly Islands, collected amongst *Zostera* in two to three fathoms on the 25th of May; and Whitsand Bay, Cornwall, collected on the 31st of August, 1903.

Thompsonula hyænæ differs from *Danielssenia* in having both branches of the first thoracic feet three-jointed.

DELAVALIA PALUSTRIS, G. S. Brady.

1868. *Delavalia palustris*, Brady, Nat. Hist. Trans. Northumb. and Durham, vol. iii. p. 134, pl. v. figs. 10-15.

1880. *Delavalia palustris*, Brady, vol. ii. p. 43, pl. 1. figs. 1-8.

This species was observed in three gatherings—in one from Salcombe, collected July 9th, 1875, in one from New Grimsby Harbour, Scilly Islands, collected May 23rd, 1903, and in one from the neighbourhood of Plymouth, collected in August 1903.

DELAVALIA GIESBRECHTI, T. & A. Scott.

1896. *Delavalia Giesbrechti*, T. & A. Scott, Ann. Scot. Nat. Hist. Oct. 1896, p. 225, pl. iv. figs. 1-10.

This species was observed in gatherings from Salcombe, collected in June 1875 (rare); Jenny Cliff Bay, Cawsand Bay, and near Chequer Buoy, Plymouth, August 1903. This species is easily distinguished by the peculiar setæ at the ends of the furcal joints.

DELAVALIA NORMANI, T. Scott.

1899. *Delavalia Giesbrechti*, var., T. Scott, 17th Rept. Fishery Board for Scotland, pt. iii. p. 254, pl. xiii. figs. 20-22.

1905. *Delavalia Normani*, T. Scott, Ann. & Mag. Nat. Hist. ser. 7, vol. xvi. p. 569 (November 1905).

This *Delavalia*, though having a somewhat close resem-

blance to *D. Giesbrechti*, may be at once distinguished from it by the difference in the armature of the furcal joints.

The following are some of the localities where *D. Normani* occurred :—Salcombe, July 2nd, 1875, and September 1903; Fowey Harbour, Cornwall, in May ; and Plymouth Sound, near Chequer Buoy, Cawsand Bay, and other places in August 1903.

BEATRICELLA MIMICA (T. Scott).

1897. *Delavalia mimica*, T. Scott, 15th Rept. Fishery Board for Scotland, pt. iii. p. 150, pl. i. figs. 1-9.

1905. *Beatricella mimica*, T. Scott, Ann. & Mag. Nat. Hist. ser. 7, vol. xvi. p. 568 (November 1905).

Salcombe, June 1875; Cattewater, and near Duke Buoy, Plymouth, 1889. *Beatricella mimica* was also obtained in several gatherings collected in May and August 1903, and for the most part in the neighbourhood of Plymouth, e.g. Cawsand Bay, Jenny Cliff Bay, and near Chequer Buoy. It also occurred in Fowey Harbour, Cornwall.

BEATRICELLA ÆMULA (T. Scott).

1893. *Delavalia æmula*, T. Scott, 11th Rept. Fishery Board for Scotland, pt. iii. p. 204, pl. iv. figs. 36-47.

1905. *Beatricella æmula*, T. Scott, Ann. & Mag. Nat. Hist. ser. 7, vol. xvi. p. 569 (footnote) (November 1905).

This species occurred very sparingly in gatherings from Salcombe, collected in June 1875 and September 1903 ; and from Jenny Cliff Bay and near Chequer Buoy, Plymouth, collected in August 1903.

CANTHOCAMPTUS MINUTUS (O. F. Müller).

1776. *Cyclops minutus*, O. F. Müller, Zool. Dan. Prodrömus, no. 2409.

1785. *Cyclops minutus*, idem, Entomotraca, seu Insecta Testacea, p. 101, pl. xvii. figs. 1-7.

1820. *Monoculus staphylinus*, Jurine, Hist. des Monocles, p. 74, pl. vii. figs. 1-19.

1850. *Canthocamptus minutus*, Baird, p. 204, pl. xxv. figs. 4-8, pl. xxx. fig. 3.

1880. *Canthocamptus minutus*, Brady, vol. ii. p. 48, pl. xlv. figs. 1-7.

1893. *Canthocamptus staphylinus*, Schmeil, ii. p. 17, pl. i., & pl. iii. figs. 16-18.

1902. *Canthocamptus staphylinus*, Lilljeborg, p. 5, pl. i. figs. 1-6.

Near St. Ives, Cornwall, in May 1905 (*R. Vallentin*). This is a common and generally distributed species.

CANTHOCAMPTUS CRASSUS, G. O. Sars.

1863. *Canthocamptus crassus*, G. O. Sars, Oversigt indenlandske Ferskvands-Copepoder, p. 23.

1880. *Attheyella spinosa*, Brady, vol. ii. p. 58, pl. xliii. figs. 15-18; pl. xlv. figs. 13-18.

1893. *Canthocamptus crassus*, Schmeil, ii. p. 37, pl. iv. figs. 1-13.

1902. *Canthocamptus crassus*, Lilljeborg, p. 22, pl. ii. figs. 5-7.

Dartmoor near Grimspound, among *Sphagnum*; and at Slapton Lea, June 1904.

CANTHOCAMPTUS TRISPINOSUS, G. S. Brady.

1880. *Canthocamptus trispinosus*, Brady, vol. ii. p. 55, pl. xlv. figs. 15-22.

1893. *Canthocamptus trispinosus*, Schmeil, ii. p. 53, pl. iii. figs. 1-11.

1902. *Canthocamptus trispinosus*, Lilljeborg, p. 13, pl. i. figs. 10-12.

Near the mouth of the River Otter, and Topsham Marshes, collected in June 1904.

CANTHOCAMPTUS PALUSTRIS, G. S. Brady.

1880. *Canthocamptus palustris*, Brady, vol. ii. p. 53, pl. xxxix. figs. 13-23.

In gatherings from brackish water at Tresco and St. Mary's, Scilly Islands, in May; and at Plymouth and Exminster, Devonshire—the first in August, and the second in September 1903; and subsequently in ponds at Woolacombe near Torquay, and at Barnstaple where the water was brackish. It has also been recorded from St. Mary's, Scilly Islands, by Dr. G. S. Brady.

CANTHOCAMPTUS HIRTICORNIS, T. Scott.

1895. *Canthocamptus hirticornis*, T. Scott, 13th Rept. Fishery Board for Scotland, pt. iii. p. 251, pl. ix. figs. 13-26.

1902. *Canthocamptus megalops*, Lilljeborg, p. 30, pl. ii. figs. 14-19.

Taken in brackish water at Tresco and St. Mary's, Scilly Islands, in May, and in rock-pools, Plymouth, at and above high water, in August 1903; rare.

CANTHOCAMPTUS PARVUS, T. & A. Scott.

1896. *Canthocamptus parvus*, T. & A. Scott, Ann. & Mag. Nat. Hist. ser. 6, vol. xviii. p. 6, pl. ii. figs. 14-22.

This small but distinct species occurred in several gatherings as follow:—Salcombe, 1878; Exmouth, between tide-marks, June 1884; New Grimsby Harbour and Harbour of St. Mary's, Scilly Islands, May 1903; and near Drake Island, and in rock-pools at and above high water, Plymouth, August 1903.

ATTHEYELLA PYGMÆA (G. O. Sars).

1863. *Canthocamptus pygmæus*, G. O. Sars, Overs indenlandske Ferskvands-Copepoder, p. 21.

1880. *Attheyella cryptorum*, Brady, vol. ii. p. 60, pl. lii. figs. 1-18.

1893. *Canthocamptus pygmæus*, Schmeil, ii. p. 61, pl. v. figs. 1-15.

1893. *Attheyella cryptorum*, T. Scott, 11th Ann. Rept. Fishery Board for Scotland, p. 225, pl. vi. figs. 21-31.

Rare in brackish water at Tresco, Scilly Islands, May 23rd, 1903. Near Bennett's Cross, Dartmoor (1550 feet above sea-level) ; marshy ground, Exmoor ; Grimspound, &c., May and June 1904.

MESOCHRA LILLJEBORGI, Boeck.

1864. *Mesochra Lilljeborgi*, Boeck, Oversigt af Norges Copepoder, p. 51.

1880. *Mesochra Lilljeborgii*, Brady, vol. ii. p. 62, pl. xli. figs. 15-21 ; pl. xlvii. figs. 16-21.

Starcross, in six fathoms, June 23rd, 1884. Rock-pools at and above high water, Plymouth, August 22nd, and in brackish water at Plymstock, August 29th, 1903.

MESOCHRA MACINTOSHI, T. & A. Scott.

1895. *Mesochra Macintoshi*, T. & A. Scott, Ann. & Mag. Nat. Hist. ser. 6, vol. xv. p. 52, pl. v. figs. 12-25.

Taken near the entrance to Fowey Harbour, Cornwall, May 9th, 1903, but appeared to be rare.

PARAMESOCHRA DUBIA, T. Scott.

1892. *Paramesochra dubia*, T. Scott, 10th Rept. Fishery Board for Scotland, pt. iii. p. 252, pl. xii. figs. 18-32.

This small and somewhat curious form was observed in two gatherings, one of which consisted of a small sample of dredging collected outside Fowey Harbour, Cornwall, the other was collected in St. Mary's Sound, Scilly Islands; both gatherings were collected in May 1903.

TETRAGONICEPS MALLEOLATA, G. S. Brady.

1880. *Tetragoniceps malleolata*, Brady, vol. ii. p. 66, pl. lxxviii. figs. 1-11.

This species, which has not been observed in A. M. N.'s collection, was found by Dr. Brady amongst dredged material from a depth of twelve fathoms inside St. Agnes, Scilly Islands, but only three specimens were obtained.

TETRAGONICEPS MACRONYX, T. Scott.

1892. *Tetragoniceps macronyx*, T. Scott, 10th Rept. Fishery Board for Scotland, pt. iii. p. 253, pl. x. figs. 19–28.

Dredged in St. Mary's Sound, Scilly Islands, in seven to eight fathoms, bottom fine sand, May 1903; only one or two specimens were observed.

LAOPHONTE SERRATA (Claus). (Pls. XIII. fig. 6; XVI. fig. 6; XVII. fig. 5.)

1863. *Cleta serrata*, Claus, Die freilebenden Copepoden, p. 123, pl. xv. figs. 13–20.

1880. *Laophonte serrata*, Brady, vol. ii. p. 71, pl. lxxiii. figs. 1–14.

This *Laophonte* was moderately frequent in some of the gatherings examined. Salcombe, 1875; Exmouth, 1884; Falmouth and at the mouth of the River Yealm, 1889. It has more recently been taken on one or two occasions in Plymouth Sound, and at St. Mary's, Scilly Islands.

Laophonte serrata has a close general resemblance to the next species, which appears also to be equally frequent; but in both the female and male of *L. serrata* the last abdominal segment is provided posteriorly with a prominent spine on the median dorsal aspect, as shown in the drawing (Pl. XIII. fig. 6). (Fig. 6, Pl. XVI., & fig. 5, Pl. XVII., represent the third and fifth thoracic feet of the male.)

LAOPHONTE INORNATA, A. Scott. (Pls. XII. fig. 5; XIII. figs. 5, 14; XIV. fig. 7; XVI. fig. 5; XVIII. figs. 3, 4; XXI. fig. 3.)

1902. *Laophonte inornata*, A. Scott, "On some Red Sea and Indian Ocean Copepoda," Trans. Liverpool Biol. Soc. vol. xvi. p. 413, pl. i. fig. 16; pl. ii. figs. 9–14.

This species, the female of which was described by A. Scott in the paper referred to above, bears a moderately close resemblance to *L. serrata*, Claus, but it is rather smaller than that species, and wants in both the female and male the posterior dorsal spine with which both sexes of that species is armed. There are also some structural differences between the two species which can only be satisfactorily made out by dissection, and a few of these differences will now be described.

The antennules in both sexes in *L. inornata* have the second joint produced exteriorly into a prominent tooth-like process, having a broadly conical outline as shown in the drawings (Pl. XII. fig. 5, and Pl. XXI. fig. 3). The female antennules are composed of seven joints (*cf.* fig. 5).

The first pair of thoracic feet are moderately slender and the outer branches are three-jointed (Pl. XVI. fig. 5).

The second, third, and fourth pairs are somewhat similar to those of *L. serrata* with the exception of the inner branch of the third pair in the male. In the male of *L. serrata* the second joint of the inner branch of the third pair is produced exteriorly into a moderately straight and elongated narrow appendage with a slightly barbed extremity, and a single seta springs from the inner margin of both the first and second joints. In the male of *L. inornata*, on the other hand, the appendage of the second joint of the inner branch is slender and sigmoid and terminates in a pointed apex, and both the first and second joints appear to be devoid of setæ on the inner margin. The third joint is nearly alike in both species (Pl. XIV. fig. 7).

The fifth pair in the female have the secondary joint cylindrical, about twice as long as broad, and furnished with five apical setæ; the second seta from the inside is long and stout, the others are smaller and of nearly equal length. The inner produced portion of the basal joint bears five setæ arranged round the distal half of the inner margin and apex as shown in the drawing (Pl. XVIII. fig. 4).

In the male the fifth pair are considerably smaller than those of the female, and resemble those of the male of *L. serrata*; the secondary joint, which is narrow and cylindrical, appears to be provided with only four apical and subapical setæ (Pl. XVIII. fig. 3).

There is no spine on the posterior dorsal aspect of the last abdominal segment in either the female or male.

The furcal joints are of moderate length.

Length of the specimens represented by the figures—female .75 mm., male .65 mm.

The occurrence of *L. inornata* on the coasts of Devon and Cornwall is of considerable interest, and greatly extends its distribution. The species was described from female specimens obtained in three gatherings collected in the Red Sea, between the Gulf of Suez and a little to the south of latitude 20° N. The following are some of the places in the Devon and Cornwall district where it has been taken:—Salcombe, and near Chequer Buoy Plymouth, Devonshire; and at Fowey, Cornwall, among *Corallina*.

LAOPHONTE HERDMANI, A. Scott. (Pls. XI. figs. 5-7 ; XII. fig. 6 ; XIII. fig. 7 ; XIV. fig. 8 ; XVII. fig. 6.)

1902. *Laophonte Herdmani*, A. Scott, l. c. p. 414, pl. i. fig. 15 ; pl. ii. figs. 3-8.

This species was also described from specimens obtained in the Red Sea in the same gatherings with the last ; and we have now to record its occurrence from Devon and Cornwall. *L. Herdmani* has a fairly close resemblance to *L. curticauda*, and though rather smaller than that species may readily be mistaken for it. The female represented by the drawing (Pl. XIII. fig. 7) measured .64 mm. in length, but the length of the male was only .51 mm.

The antennules of the female are six-jointed ; the first three and the last are subequal in length and of moderate size, but the other two are very small (Pl. XII. fig. 6).

The antennæ and mouth-organs resemble those of *L. curticauda*.

The first pair of thoracic feet have long and slender inner branches ; the outer branches, which are also slender, are short and three-jointed (Pl. XI. fig. 5).

The second, third, and fourth pairs in the female and the fourth pair in the male are somewhat similar to those of *L. curticauda*, but the second and third pairs of the male are distinctly different, especially as regards the inner branches ; in the second pair the second joint of the inner branch (Pl. XI. fig. 6) is furnished with two marginal and two terminal setæ, but the hook-like appendage so characteristic of *L. curticauda* is wanting, being replaced by a plumose seta. In the third pair the inner branch appears to be three-jointed, while the second joint ends in a moderately stout spine-like process which extends beyond the extremity of the third joint ; the third joint bears four setæ, two of which are marginal and two terminal (Pl. XIV. fig. 8).

The fifth pair in the female are somewhat similar to those of *L. curticauda* (Pl. XVII. fig. 6). In the male the inner portion of the basal joint is not produced and appears to be furnished with only a single seta ; the secondary joint is small, and provided with five setæ on the subtruncate apex (Pl. XI. fig. 7).

The furcal joints are about equal in length to the last segment of the abdomen.

Salcombe, 1875, and Exmouth, 1884 ; Fowey, Cornwall ; St. Mary's, Scilly Islands, near Drake Island and other places in the neighbourhood of Plymouth, not uncommon.

LAOPHONTE CURTICAUDA, Boeck.

1864. *Laophonte curticauda*, Boeck, Oversigt af Norges Copepoder, p. 55.

1880. *Laophonte curticauda*, Brady, vol. ii. p. 80, pl. lxxiii. figs. 15-18; pl. lxxvi. figs. 1-9.

Sparingly in gatherings from Salcombe 1875, Exmouth 1884, mouth of the River Yealm 1889, St. Mary's Harbour, Scilly Islands, and from one or two localities near Plymouth.

LAOPHONTE THORACICA, Boeck.

1864. *Laophonte thoracica*, Boeck, "Oversigt af Norges Copepoder," Vidensk.-Selsk. Forhand. Christ. p. 54.

1880. *Laophonte thoracica*, Brady, vol. ii. p. 76, pl. lxxvii. figs. 1-8.

The following are some of the localities where *L. thoracica* was obtained:—Salcombe, 1875, in six fathoms near Duke Buoy, Plymouth, August 1889; near Chequer Buoy, Plymouth, and three miles north-west of Eddystone Lighthouse, in August 1903.

LAOPHONTE SIMILIS (Claus).

1866. *Cleta similis*, Claus, Die Copepoden-fauna v. Nizza, p. 23, pl. v. figs. 13, 14.

1880. *Laophonte similis*, Brady, vol. ii. p. 78, pl. lxxv. figs. 1-14.

Only observed in two gatherings, both of which were from the Estuary of the River Exe. Dr. Brady records *L. similis* from the Scilly Islands, dredged in fourteen fathoms and plentiful on weeds between tide-marks.

LAOPHONTE LONGICAUDATA, Boeck.

1864. *Laophonte longicaudata*, Boeck, Oversigt af Norges Copepoder, p. 55.

1880. *Laophonte longicaudata*, Brady, vol. ii. p. 82, pl. lxxiv. figs. 12-15; pl. lxxvi. figs. 10-15.

Salcombe, 1875, rare. Starcross, June 1880, rare. Three miles north-west of Eddystone Lighthouse, August 31st, 1903, frequent.

LAOPHONTE LAMELLIFERA (Claus).

1863. *Cleta lamellifera*, Claus, p. 123, pl. xv. figs. 21-25.

1880. *Laophonte lamellifera*, Brady, vol. ii. p. 83, pl. lxxv. figs. 15-23.

Obtained in gatherings from Salcombe, 1875; Starcross, 1884; Whitsand Bay, Cornwall, Jenny Cliff Bay, and near Chequer Buoy, Plymouth, in August 1903, not uncommon. Dr. Brady records *L. lamellifera* from the Scilly Islands.

LAOPHONTE HISPIDA (Brady & Robertson).

1873. *Asellopsis hispida*, Brady & Robertson, Ann. & Mag. Nat. Hist. ser. 4, vol. xii. p. 137, pl. ix. figs. 6-10.

1880. *Laophonte hispida*, Brady, vol. ii. p. 85, pl. lxxxi. figs. 1-11.

In gatherings from a number of places, as Salcombe, 1875 (in three gatherings) ; near the entrance to Fowey Harbour, Cornwall, and St. Mary's Sound, Scilly Islands, in May; Cawsand Bay and near Chequer Buoy, Plymouth, in August 1903.

LAOPHONTE DEPRESSA, T. Scott.

1894. *Laophonte depressa*, T. Scott, 12th Rept. Fishery Board for Scotland, pt. iii. p. 245, pl. vi. figs. 24-31, pl. vii. figs. 1-3.

A single specimen of *L. depressa* was obtained from Salcombe, collected June 30th, 1875.

LAOPHONTE INOPINATA, T. Scott.

1892. *Laophonte inopinata*, T. Scott, 10th Rept. Fishery Board for Scotland, pt. iii. p. 256, pl. xi. figs. 1-12.

Plymouth, in rock-pools at and above high-water mark, August 31st, 1903. Only a single specimen was observed.

LAOPHONTE PROPINQUA, T. & A. Scott.

1895. *Laophonte propinqua*, T. & A. Scott, Ann. & Mag. Nat. Hist. ser. 6, vol. xv. p. 460, pl. xvii. figs. 1-9.

Taken at Exmouth between tide-marks, in June 1884 ; and near Duke Buoy, Plymouth, in six fathoms, in August 1889. It was rare in a gathering from St. Mary's Sound, Scilly Islands, collected in May ; and from Cawsand Bay in Plymouth Sound, August 1903.

LAOPHONTODES TYPICUS, T. Scott.

1894. *Laophontodes typicus*, T. Scott, 12th Rept. Fishery Board for Scotland, pt. iii. p. 249, pl. viii. figs. 2-8.

This somewhat curious form occurred in two of the Plymouth gatherings, Cawsand Bay and near Chequer Buoy.

LAOPHONTODES BICORNIS, A. Scott.

1896. *Laophontodes bicornis*, A. Scott, Rept. on the Sea-fisheries Laboratory, Liverpool, p. 45, pl. iii. figs. 24, 25 ; pl. iv. figs. 1-7.

This distinct, though small species was dredged in New Grimsby Harbour, Scilly Islands, and in Plymouth Sound, but appeared to be very rare.

NORMANELLA DUBIA (Brady & Robertson).

1876. *Laophonte dubia*, Brady & Robertson, Brit. Assoc. Rept. (1875) p. 196 (only name).

1880. *Normanella dubia*, Brady, vol. ii. p. 87, pl. lxxviii. figs. 12-22.

The following are some of the localities where this species was found :—Salcombe, Exmouth, Plymouth, three miles north-west of Eddystone Lighthouse, Fowey Harbour, Cornwall, and New Grimsby Harbour, Scilly Islands.

NORMANELLA ATTENUATA, A. Scott.

1896. *Normanella attenuata*, A. Scott, Rept. on the Sea-fisheries Laboratory, Liverpool, p. 47, pl. iv. figs. 8-20.

Four specimens which we ascribe to this species were obtained from outside Fowey Harbour, Cornwall, May 19th, 1903.

CLETODES LINEARIS (Claus).

1866. *Lilljeborgia linearis*, Claus, Die Copepoden-fauna von Nizza, p. 22, pl. ii. figs. 1-8.

1880. *Cletodes linearis*, Brady, vol. ii. p. 95, pl. lxxx. figs. 1-14.

Salcombe, July 2nd, 1875. Exmouth, between tide-marks, June 9th, 1884, not common. Dr. Brady records this species from St. Mary's, Scilly Islands.

CLETODES LONGICAUDATA, Brady & Robertson.

1876. *Cletodes longicaudata*, Brady & Robertson, Brit. Assoc. Rept. (1875) p. 196 (only name).

1880. *Cletodes longicaudata*, Brady, vol. ii. p. 92, pl. lxxix. figs. 13-19.

Salcombe, June 30th, 1875. Near Eddystone Lighthouse, in 30 fathoms, July 30th, 1889, and Whitsand Bay, Cornwall, August 31st, 1903; rare.

CLETODES LIMICOLA, G. S. Brady.

1872. *Cletodes limicola*, Brady, Nat. Hist. Trans. Northumb. and Durham, vol. iv. p. 438, pl. xxi. figs. 10-17.

1880. *Cletodes limicola*, Brady, vol. ii. p. 90, pl. lxxix. figs. 1-12.

Salcombe, June 30th, 1875. Near Eddystone Lighthouse in 30 fathoms, July 30th, 1889. Plymouth Sound in Jenny Cliff Bay, and near Chequer Buoy, August 1903; not common.

CLETODES PROPINQUA, Brady & Robertson.

1876. *Cletodes propinqua*, Brady & Robertson, Brit. Assoc. Rept. (1875) p. 196 (only name).

1880. *Cletodes propinqua*, Brady, vol. ii. p. 94, pl. lxxvii. figs. 9-17.

Very sparingly from Salcombe, Exmouth, and Plymouth, Devonshire ; Fowey, Cornwall ; and New Grimsby Harbour, Scilly Islands.

CLETODES PERPLEXA, T. Scott.

1899. *Cletodes perplexa*, T. Scott, 17th Rept. Fishery Board for Scotland, pt. iii. p. 257, pl. xi. figs. 12-20, pl. xii. fig. 1.

Rare in a gathering from Salcombe collected June 30th, 1875, and in another from the neighbourhood of Plymouth, collected August 14th, 1903. *C. perplexa* is readily distinguished by the peculiar form of the fifth pair of thoracic feet.

CLETODES NEGLECTA, T. Scott.

1903. *Cletodes neglecta*, T. Scott, 21st Rept. Fishery Board for Scotland, pt. iii. p. 120, pl. iv. figs. 20-31.

Cletodes neglecta, though recently described, has been known for a considerable period. It has a general resemblance to *C. longicaudata*, but the furcal joints are only about half the length of those of that species. Salcombe (1875), Starcross (1884), Plymouth Sound, near Chequer Buoy, and three miles north-west of Eddystone Lighthouse (1903).

CLETODES LATA, T. Scott.

1892. *Cletodes lata*, T. Scott, 10th Rept. Fishery Board for Scotland, pt. iii. p. 257, pl. x. figs. 10-18.

Three miles north-west of Eddystone Lighthouse, August 31st, 1903.

CLETODES SIMILIS, T. Scott.

1895. *Cletodes similis*, T. Scott, 13th Rept. Fishery Board for Scotland, pt. iii. p. 168, pl. iii. figs. 22-26 ; pl. iv. figs. 1-3.

This *Cletodes* occurred very sparingly at Salcombe, Exmouth, and Plymouth.

CLETODES CURVIROSTRIS, T. Scott.

1894. *Cletodes curvirostris*, T. Scott, 12th Rept. Fishery Board for Scotland, pt. iii. p. 250, pl. viii. figs. 18-26.

The only gathering in which this species was observed was from Plymouth Sound in four to six fathoms, collected August 12th, 1903 ; very rare.

CLETODES HIRSUTIPES, T. Scott.

1897. *Cletodes hirsutipes*, T. Scott, 15th Rept. Fishery Board for Scotland, pt. iii. p. 171, pl. i. figs. 11-18.

In the same gathering with the last, and appeared to be equally rare.

CLETODES TENUIPES, T. Scott.

1897. *Cletodes tenuipes*, T. Scott, 15th Rept. Fishery Board for Scotland, pt. iii. p. 170, pl. i. figs. 19-27.

In gatherings from Salcombe, Exmouth, and from Cawsand Bay and near Chequer Buoy in Plymouth Sound, and was rare in them all.

ENHYDROSOMA CURVATUM (Brady & Robertson).

1876. *Rhizothrix curvata*, Brady & Robertson, Rept. Brit. Assoc. (1875) p. 197 (only name).

1880. *Enhydrosoma curvatum*, Brady, vol. ii. p. 98, pl. lxxxi. figs. 12-15; pl. lxxxii. figs. 11-19.

Salcombe (1875), Starcross (1884), Plymouth, Whitsand Bay, Cornwall, and St. Mary's, Scilly Islands. New Grimsby Harbour and Porcressa Bay, Scilly Islands (*Brady*).

ENHYDROSOMA GRACILE, T. Scott.

1903. *Enhydrosoma gracile*, T. Scott, 21st Rept. Fishery Board for Scotland, pt. iii. p. 122, pl. ii. figs. 16-26; pl. iii. fig. 1.

Whitsand Bay, Cornwall, and St. Mary's Sound, Scilly Islands; rare.

NANNOPUS PALUSTRIS, G. S. Brady.

1880. *Nannopus palustris*, Brady, vol. ii. p. 101, pl. lxxvii. figs. 18-20.

1902. *Nannopus palustris*, T. Scott, 20th Rept. Fishery Board for Scotland, p. 466, pl. xxiii. figs. 13-25.

This somewhat curious and interesting species was taken in brackish water ponds at Barnstaple, Devon, on June 4th, 1904.

PLATYCHELIPUS LITTORALIS, G. S. Brady.

1880. *Platychelipus littoralis*, Brady, vol. ii. p. 103, pl. lxxix. figs. 20-23; pl. lxxx. figs. 15-19.

Starcross, Devon, in five fathoms, June 23rd, 1884; Whitsand Bay, Cornwall, August 31st, 1903: rare.

HETEROPSYLLUS CURTICAUDATUS, T. Scott.

1894. *Heteropsyllus curticaudatus*, T. Scott, 12th Rept. Fishery Board for Scotland, pt. iii. p. 252, pl. viii. figs. 27-34.

This small but well-marked species occurred in several of the gatherings, and in one or two of them it was moderately frequent.

Salcombe, collected in 1875 and 1903; near Duke Buoy, Plymouth, 1889; off Jenny Cliff Bay, and near Chequer Buoy in Plymouth Sound, 1903.

ILYOPSYLLUS CORIACEUS, Brady & Robertson.

1873. *Ilyopsyllus coriaceus*, Brady & Robertson, Ann. & Mag. Nat. Hist. ser. 4, vol. xii. p. 132, pl. ix. figs. 1-5.

1880. *Ilyopsyllus coriaceus*, Brady, vol. ii. p. 143, pl. lxxxii. figs. 1-10.

1900. *Ilyopsyllus coriaceus*, Brady, Nat. Hist. Trans. Northumberland, Durham, and Newcastle-upon-Tyne, vol. xiii. p. 434, pl. xi. figs. 1-14; pl. xii. figs. 8-16.

Two fine specimens of this species—a male and female—were taken by surface tow-net at Salcombe in July 1875; and notwithstanding their long immersion in methylated spirit the dark red colour so characteristic of the species is almost unchanged. Rock-pools, Plymouth, August 22nd, 1903; rare.

LAOPHONTINA, Norman & T. Scott.

Somewhat like *Laophonte* in general appearance. Antennules short and composed of about six joints. Secondary branches of the antennæ one-jointed. First pair of thoracic feet nearly as in *Laophonte*. Second and third pairs one-branched and more or less rudimentary. Fourth pair two-branched, the outer branch is composed of three joints, but the inner is only one-jointed. Fifth pair as in *Laophonte*. There is only one species, which is described below.

LAOPHONTINA DUBIA, Norman & T. Scott. (Pls. X. figs. 12-15; XI. fig. 8; XII. figs. 7, 8; XV. fig. 11; XVI. fig. 7; XVII. fig. 7; XVIII. fig. 5.)

1905. *Laophontina dubia*, Norman & Scott, Ann. & Mag. Nat. Hist. ser. 7, vol. xv. p. 292.

Description of the species.—Somewhat like *Laophonte* in general appearance, moderately slender, the length of the male specimen represented by the drawing (Pl. X. fig. 12) about 4 mm. ($\frac{1}{6\frac{1}{2}}$ of an inch).

The antennules of the female (Pl. XII. fig. 7) short and composed of six joints; the first joint is moderately stout and longer than any of the others, there is a small tooth-like process near the middle of the exterior margin and another at the inner distal angle; second joint shorter than the first and armed exteriorly with a strong projecting tooth; third joint rather longer and less robust than the second; the fourth and fifth joints very small; terminal joint longer than the entire length of the two preceding ones. The antennules of the males are modified for grasping, but the armature of the first two joints is similar to that of the female (Pl. XII. fig. 8).

Antennæ moderately slender, secondary branch small and one-jointed (Pl. XV. fig. 11).

First pair of thoracic feet somewhat like those of *Laophonte*: inner branch elongated and two-jointed, the first long and narrow, the other small and furnished with moderately long and stout terminal claw; outer branch very small, and composed of a single joint which bears a few small setæ (Pl. XVI. fig. 7).

Second pair rudimentary and one-branched, consisting of a single short and moderately stout joint which bears a few small setæ (Pl. X. fig. 13).

The third pair are also rudimentary and one-branched, but two-jointed (Pl. X. fig. 14) and provided with two spiniform terminal setæ.

The fourth pair are composed of two branches: the outer branch is very short and stout and consists of three joints, the first two of which bear moderately long and stout spine-like setæ on their outer margins, the end joint is very small and provided with two setæ at the apex, one long the other short and spiniform. Inner branch small, one-jointed, and furnished with two elongated setæ (Pl. XI. fig. 8). The fourth pair in the male are smaller than in the female, and the inner branch nearly obsolete (Pl. X. fig. 15).

The fifth pair in the female are moderately large and foliaceous; basal joint broadly triangular and provided with about four plumose setæ—one at the apex and three on the inner margin; secondary joint ovate, the length being equal to about twice the breadth, and furnished with four plumose terminal setæ (Pl. XVII. fig. 7). In the male the fifth pair are very small and rudimentary.

The furcal joints are slender and about equal in length to the last abdominal segment; and the principal tail setæ have a dilated base as shown in the drawing (Pl. XVIII. fig. 5).

Habitat. St. Mary's, Scilly Islands, May 1903; rare.

DIOSACCUS TENUICORNIS (Claus).

1863. *Dactylopus tenuicornis*, Claus, p. 127, pl. xvi. figs. 17-23.

1880. *Diosaccus tenuicornis*, Brady, vol. ii. p. 68, pl. lix. figs. 12-16;
pl. lx. figs. 14-18.

Salcombe ; Exmouth ; Falmouth ; near Rat Island, near Drake Island, and other localities in the neighbourhood of Plymouth ; not uncommon.

THALESTRIS LONGIMANA, Claus.

1863. *Thalestris longimana*, Claus, p. 130, pl. xviii. figs. 1-11.

1880. *Thalestris longimana*, Brady, vol. ii. p. 136, pl. lx. figs. 1-13.

1905. *Thalestris longimana*, G. O. Sars, p. 104, pls. lix., lx.

Salcombe, 1875 ; Starcross, 1880 and 1884 ; Plymouth Sound ; and New Grimsby and St. Mary's Harbours, Scilly Islands, 1903.

PARATHALESTRIS HIBERNICA (Brady & Robertson).

1873. *Thalestris hibernica*, Brady & Robertson, Ann. & Mag. Nat. Hist. ser. 4, vol. xii. p. 135, pl. viii. figs. 17-19.

1880. *Thalestris hibernica*, Brady, vol. ii. p. 134, pl. lxii. figs. 13-17 ;
pl. lxiii. figs. 14-15.

1905. *Parathalestris hibernica*, G. O. Sars, p. 113, pl. lxviii.

P. hibernica occurred sparingly in several gatherings ; Salcombe, 1875 ; Starcross ; near Drake Island, Plymouth Sound ; and mouth of the River Yealm.

PARATHALESTRIS CLAUSI (Norman).

1869. *Thalestris Clausi*, Norman, Brit. Assoc. Report (1868), p. 297.

1880. *Thalestris Clausi*, Brady, vol. ii. p. 128, pl. lxii. figs. 1-12.

1905. *Parathalestris Clausi*, G. O. Sars, p. 111, pls. lxx., lxvi.

Salcombe ; Starcross ; Plymouth Sound and other places near Plymouth ; Fowey, Cornwall ; and harbour, St. Mary's, Scilly Islands.

PARATHALESTRIS HARPACTOIDES (Claus).

1863. *Thalestris harpactoides*, Claus, p. 133, pl. xix. figs. 2-11.

1880. *Thalestris harpacticoides*, Brady, vol. ii. p. 127, pl. l. figs. 9-16 ;
pl. lix. fig. 1.

1905. *Parathalestris harpacticoides*, G. O. Sars, p. 112, pl. lxvii.

Fowey Harbour, Cornwall, near entrance, bottom muddy sand, May 9th, 1903 ; rather rare.

PHYLLOTHALESTRIS MYSIS (Claus).

1863. *Thalestris mysis*, Claus, p. 130, pl. xviii. figs. 12-16.
 1880. *Thalestris mysis*, Brady, vol. ii. p. 121, pl. lviii. figs. 1-3.
 1905. *Phyllothalestris mysis*, G. O. Sars, p. 116, pls. lxx., lxxi.

Starcross, June 20th, 1880. Mouth of the River Yealm, July 7th, 1889. Whitsand Bay, Cawsand Bay, and near Drake Island, Plymouth, August 1903. Taken sparingly in the Cattewater, Plymouth, in March 1889 (*Bourne*). New Grimsby Harbour, Scilly Islands (*Brady*).

HALITHALESTRIS CRONI (Kröyer).

1842. *Harpacticus Croni*, Kröyer, in "Gaimard's Voyages en Scandinavie, &c.," pl. xliii. figs. 3 a-n.
 1880. *Thalestris serrulata*, Brady, vol. ii. p. 133, pl. lix. figs. 2-11.
 1905. *Halithalestris Croni*, G. O. Sars, p. 118, pl. lxxii.

This species was taken by A. M. N. outside Fowey Harbour, Cornwall, near the entrance to the harbour, in three to four fathoms, bottom muddy sand, May 9th, 1903. Dr. Brady has also recorded it from New Grimsby Harbour, Scilly Islands.

RYNCHOTHALESTRIS RUFOCINCTA (Norman).

1880. *Thalestris rufocincta*, Norman; Brady, vol. ii. p. 125, pl. lvii. figs. 1-9.
 1905. *Rhynchothalestris rufocincta*, G. O. Sars, p. 120, pls. lxxiii., lxxiv.

Sparingly at Salcombe, June 1875 and September 1903. Starcross, in three fathoms, 1884. Cawsand Bay and near Duke Buoy, Plymouth, July 1889. Harbour, St. Mary's, Scilly Islands, in May 1903.

MICROTHALESTRIS FORFICULA (Claus).

1863. *Thalestris forficula*, Claus, p. 131, pl. xvii. figs. 7-11.
 1894. *Thalestris forficuloides*, T. & A. Scott, Ann. & Mag. Nat. Hist. ser. 6, vol. xiii. p. 142, pl. ix. figs. 4-9.
 1905. *Microthalestris forficula*, G. O. Sars, p. 123, pl. lxxvi.

Rock-pools at and above high-water mark, Plymouth, August 22nd, 1903; rather rare. We regard the *Thalestris forficuloides* described in 1894 by T. & A. Scott, from specimens obtained in the Firth of Forth, as identical with Claus's species. *M. forficula*, though apparently widely distributed, does not seem to be anywhere very common.

AMENOPHIA PELTATA, Boeck.

1864. *Amenophia peltata*, Boeck, Oversigt Norges Copepoder, p. 45.
 1880. *Thalestris peltata*, Brady, vol. ii. p. 138, pl. liii. figs. 11-15.
 1895. *Thalestris peltata*, T. & A. Scott, Ann. & Mag. Nat. Hist. ser. 6, vol. xvi. p. 354, pl. xv. figs. 15-16; pl. xvi. figs. 1-8.

One or two specimens of this somewhat rare species dredged at Salcombe, June 30th, 1875. Dr. Brady dredged *A. peltata* in forty fathoms off St. Agnes, Scilly Islands. As this species differs not only in its general form but also in the structure of the first pair of thoracic feet, and in some other anatomical details from the typical *Thalestris*, we have restored Boeck's name for the genus.

*DACTYLOPUSIA TISBOIDES (Claus).

1863. *Dactylopus tisboides*, Claus, p. 127, pl. xvi. figs. 24-28.
 1880. *Dactylopus tisboides*, Brady (*partim*), vol. ii. p. 106, pl. liv. figs. 1-13.
 1905. *Dactylopus thisboides*, G. O. Sars, p. 126, pls. lxxvii., lxxviii. fig. 1.

Exmouth, Salcombe, Plymouth, Falmouth. Also in St. Mary's Harbour, Scilly Islands, amongst *Zostera*.

DACTYLOPUSIA VULGARIS, G. O. Sars.

1863. *Dactylopus Strömii*, Claus, p. 126, pl. xvi. figs. 1-6.
 1880. *Dactylopus Strömii*, Brady, vol. ii. p. 111, pl. lv. figs. 1-13.
 1905. *Dactylopusia vulgaris*, G. O. Sars, p. 128, pl. lxxiv. fig. 1.

This is not *Canthocamptus Strömii*, Baird.

Taken sparingly in Cattewater and at the mouth of the River Yealm; near Chequer Buoy, Plymouth; near Starcross; Salcombe (September 1903). Scilly Islands (*Brady*).

DACTYLOPUSIA SIMILIS (Claus).

1866. *Dactylopus similis*, Claus, Die Copepoden-fauna von Nizza, p. 25, pl. ii. figs. 29, 30.
 1880. *Dactylopus similis*, Brady, vol. ii. p. 110, pl. lv. figs. 14-16.

Mouth of the River Yealm, Cawsand Bay in Plymouth Sound; New Grimsby Harbour, Scilly Islands. Only a few specimens observed.

* *Dactylopusia*, Norman. See Canon Norman on "New Generic Names," in Ann. & Mag. Nat. Hist. ser. 7, vol. xi. p. 368 (April 1903).

DACTYLOPUSIA TENUIREMIS (Brady & Robertson).

1876. *Dactylopus tenuiremis*, Brady & Robertson, Brit. Assoc. Rept. (1875) p. 197 (only name).

1880. *Dactylopus tenuiremis*, Brady, vol. ii. p. 115, pl. lvi. figs. 12-18.

The form which we have ascribed to this species occurred very sparingly in a gathering dredged outside Fowey Harbour, Cornwall, in May 1903.

DACTYLOPUSIA LONGIROSTRIS (Claus).

1863. *Dactylopus longirostris*, Claus, p. 127, pl. xvii. figs. 4-6.

1899. *Dactylopus longirostris*, T. Scott, "Marine and Freshwater Crustacea of Franz-Josef Land," Linn. Soc. Journ., Zool. vol. xxvii. p. 105, pl. iii. figs. 5-8.

This species was observed in the same gathering as the last, but appeared to be rare.

DACTYLOPUSIA BREVICORNIS (Claus).

1863. *Dactylopus brevicornis*, Claus, p. 29, pl. iii. figs. 20-25.

1880. *Dactylopusia brevicornis*, Brady, vol. ii. p. 118, pls. lvii. figs. 10-12, lviii. fig. 14.

1905. *Dactylopusia brevicornis*, G. O. Sars, p. 130, pl. lxxx.

Salcombe, 1875; Starcross in about 5 fathoms, June 23rd, 1884; mouth of the River Yealm, August 1889; one or two other localities near Plymouth, August 1903. Also in New Grimsby Harbour, Scilly Islands, dredged in 5 to 9 fathoms, May 23rd, 1903.

DACTYLOPUSIA MINUTA (Claus).

1863. *Dactylopus minutus*, Claus, p. 126, pl. xvi. figs. 14, 15.

1880. *Dactylopus minutus*, Brady, vol. ii. p. 119, pl. lxvii. figs. 12-14.

Salcombe, rare, 1875; and in another gathering from the same place collected September 8th, 1903.

DACTYLOPUSIA DEBILIS (Giesbrecht).

1882. *Dactylopus debilis*, Giesbrecht, Die freilebenden Copepoden der Kieler Förde, p. 122, pl. i. figs. 7, 19; pl. iii. fig. 12 *et seq.*

1903. *Dactylopus debilis*, T. Scott, 21st Rept. Fishery Board for Scotland, pt. iii. p. 128, pl. v. figs. 20-31.

This species, which has only recently been added to the British fauna, occurred very sparingly in one of the gatherings from Salcombe collected in 1875; it has also been observed in gatherings from the neighbourhood of Plymouth, and from Fowey Harbour.

DACTYLOPUSIA VALIDA, Norman & T. Scott. (Pls. X. fig. 16; XII. fig. 9; XIII. fig. 12; XVII. fig. 8; XX. fig. 6.)

1905. *Dactylopusia valida*, Norman & Scott, Ann. & Mag. Nat. Hist. ser. 7, vol. xv. p. 293.

Description of the female.—Body moderately robust and resembling *Dactylopusia tisboides* in its general appearance and size.

The antennules are short and stout and composed of eight joints; the first two are the largest, the fifth and seventh are smaller than the others, but the remaining four are nearly of equal length (Pl. XII. fig. 9). The proportional lengths of the various joints are shown approximately by the formula :—

Proportional lengths of the joints	13	11	7	8	5	8	5	8
Numbers of the joints	1	2	3	4	5	6	7	8

The three-jointed secondary branches of the antennæ are comparatively large and stout and furnished with several setæ (Pl. X. fig. 16).

The mandibles and maxillæ resemble those of *D. tisboides*, so also do the first maxillipeds.

The second maxillipeds, which are moderately stout, are provided with elongated and slender terminal claws (Pl. XIII. fig. 12).

The outer branches of the first pair of thoracic feet, which are short and proportionally very stout, are armed with strong spines as shown in the drawing (Pl. XX. fig. 6); the first two joints are moderately large, but the third though distinct is very small. The inner branches are also robust; the first joint is elongated and equal to about one and a half times the entire length of the outer branches, the second and third are very small, and the principal terminal claw-like spine is moderately long and slender.

The second, third, and fourth pairs resemble the same three pairs in *D. tisboides*.

In the fifth pair the primary joint is moderately elongated and reaches to about the extremity of the secondary joint and bears five setæ of moderate length which spring from the rounded apex, there is also a minute spine between the two outer setæ and the next two. The secondary joint has a broadly ovate outline, the length being rather less than twice the width at the broadest part, the inner margin is nearly straight but the outer is moderately convex; a small seta springs from the middle, and a long one from near the distal end of the inner margin, while five are

arranged round the lower half of the outer margin and apex, as shown in the drawing (Pl. XVII. fig. 8).

The furcal joints are very short.

Habitat. Near Beggars Island, Plymouth, 1889; apparently not very common. No males have been observed.

Remarks. This species is readily distinguished by the robust form and also the structure of the first pair of thoracic feet, the stout eight-jointed antennules, and the form and armature of the fifth feet.

DACTYLOPODELLA FLAVA (Claus).

1866. *Dactylopus flavus*, Claus, Die Copepoden-fauna von Nizza, p. 28, pl. iii. figs. 13-16.

1880. *Dactylopus flavus*, Brady, vol. ii. p. 116, pl. lvi. figs. 1-11.

1905. *Dactylopodella flava*, G. O. Sars, p. 132, pl. lxxxi.

Mouth of the River Yealm, collected in August 1889.

VALLENTINIA *, nov. gen.

Generic Characters.—Female: Somewhat similar to *Dactylopodella*, G. O. Sars. Antennules short and composed of six articulations. Antennæ with outer ramus two-jointed. Oral parts as in *Dactylopusia*. First pair of thoracic feet tolerably short; outer ramus three-jointed, shorter than the inner; inner ramus robust and composed of two joints, first joint stout and rather longer than the entire outer ramus, second joint very short and armed with a strong terminal claw and one or two setæ. The next three pairs have both rami distinctly three-jointed, the outer ramus being longer than the inner and somewhat densely spinulose on the outer margin, while the inner ramus of the second pair has the joints distinct as in the third and fourth pairs, the middle joint having only one seta inside. Fifth pair with basal joint broadly lamelliform, secondary joint smaller and scarcely produced beyond the end of the basal joint.

Male: Similar to the female except in the hinged and otherwise modified antennules; in the inner ramus of the second pair of thoracic feet being two-jointed, and the second joint tolerably elongated and armed with a stout and nearly straight terminal claw, while several setæ spring from the inner edge; and in the fifth pair, which are small, having

* Named after Mr. Rupert Vallentin of St. Ives, Cornwall, who is working at the Crustacea and has been of much assistance to us in most kindly making gatherings of freshwater Entomostraca from various places in that county.

the basal joint armed interiorly with only two spine-like setæ, while the small secondary joint is armed similarly to the same joint in the female.

The genus *Vallentinia* differs from *Dactylopusia*, which it somewhat closely resembles, chiefly in the structure of the inner rami of the second pair of thoracic feet in both sexes and in one or two other minor points.

VALLENTINIA ORNATA, Norman & T. Scott. (Pls. XIII. fig. 11; XIV. fig. 10; XVI. figs. 8-10; XVIII. fig. 7; XIX. fig. 2; XXI. figs. 4, 5.)

1905. *Dactylopusia ornata*, Norman & Scott, Ann. & Mag. Nat. Hist. ser. 7, vol. xv. p. 294.

Description of the female.—Body moderately robust and somewhat similar in form to *Dactylopusia rostrata* (T. Scott), but scarcely more than half the size; length of the specimen represented by the drawing (Pl. XIX. fig. 2) is .62 mm. ($\frac{1}{40}$ of an inch).

Antennules short, moderately stout, and composed of six subequal joints (Pl. XXI. fig. 4).

Antennæ somewhat like those of *Dactylopusia rostrata* (T. Scott), the secondary branches being also as in that species apparently only two-jointed. The other cephalic appendages appear also to be similar to those of the same species.

The first pair of thoracic feet (Pl. XVI. fig. 8) are short and stout. The outer ramus is three-jointed and shorter than the first joint of the inner; the first and second joints are of moderate size, and each has the outer margin fringed with short setæ, while a setiferous spine springs from its outer distal angle; the second joint bears also a plumose seta on its inner margin; the end joint is very small and furnished with several spiniform apical setæ. The inner ramus appears to be only two-jointed, the first joint being stout and longer than the entire outer ramus; this joint bears a moderately long plumose seta on its inner margin; the end joint, which is short, is armed with a stout and slightly curved claw-like terminal spine and one or two setæ as in the drawing.

The next three pairs resemble those of *D. rostrata* (see fig. 10, Pl. XVI., which represents the fourth pair).

The fifth pair in the female (Pl. XVIII. fig. 7) are broadly lamelliform; the basal joint, which is only moderately produced interiorly, bears five spiniform setæ of varying lengths on its broadly rounded distal margin. The secondary joint, which is subquadrangular in outline, is also provided with

five stout setæ, one near the distal end of the outer margin, three on the truncate apex, and one on the inner margin, as shown in the figure.

The furcal joints are very short.

The male does not differ greatly from the female except in the following particulars :—The antennules are modified for grasping (Pl. XXI. fig. 5). The outer branches of the second pair of thoracic feet are armed with stronger spines than the same pair in the female, while the inner branches are only two-jointed and armed with a stout and claw-like terminal spine (Pl. XVI. fig. 9). The fifth pair are somewhat smaller than those of the female, and the inner and broadly-rounded portion of the basal joint bears only two apical spines (Pl. XIV. fig. 10).

Remarks.—*Vallentinia ornata* was moderately frequent in some of the gatherings, and especially in those from the coast of Devon. Specimens recently collected were easily recognized by their peculiar colour, which was for the most part of a uniform yellow or, in some examples, yellowish-grey; but that which rendered the specimens so conspicuous was the band of a fine purple colour which adorned the posterior portion of the cephalic segment; this band, which covers about a third of the entire length of the segment, does not extend all the way across but terminates on each side a short distance from the margin; moreover, the posterior edge of the band is even and coincides with the edge of the cephalic segment, but the anterior edge is deeply crenulated, as shown in the drawing (Pl. XIX. fig. 2). Immersion in methylated spirit speedily destroys the purple colour, but it remains intact for a considerable time if the specimens be preserved in formalin.

Habitat. Mouth of the River Yealm, August 1889. Fowey, Cornwall, between tide-marks; and New Grimsby Harbour, Scilly Islands, May 1903. Plymouth Sound, vicinity of Chequer Buoy, and Mill Bay, Plymouth, in August; and at Salecombe in September of the same year.

MEGARTHURUM *, nov. gen.

Female. Body considerably dilated and depressed; cephalic segment large and expanded; rostrum small, deflexed; the next three segments also expanded, and each narrower and shorter than the preceding one; abdomen moderately stout, but narrower and shorter than the cephalothorax. Antennules short and composed of six or seven joints. Antennæ with outer ramus of moderate length and biarticulate. Mandibles com-

* ἀρθρον, i. e. big joint, with reference to the basal joint of the inner branch of the first feet.

paratively small; branches of palp moderately elongate and subequal, lower branch armed with two (or three) peculiarly strong spines in addition to several setæ. Other oral parts as in *Dactylopusia*. First pair of thoracic feet with the three-jointed outer ramus considerably shorter than the inner; inner ramus composed of two joints, the first joint longer than the entire outer ramus, and greatly dilated at the base but tapering to the distal end, second joint very short and armed at the apex with one strong but moderately short claw and an elongated seta. The second to the fourth pairs of feet somewhat similar to the same pairs in *Dactylopusia*, in which both rami are distinctly three-jointed, but the middle joint of the inner ramus has only one seta on the inner margin. Fifth pair large and foliaceous; the basal or primary joint forms a broad quadrangular plate, with a deep notch near the middle of the outer edge, in which the small secondary joint is articulated (see fig. 4, Pl. XX.).

Male unknown.

This genus approaches *Dactylopodella*, G. O. Sars, but differs distinctly in some important anatomical details, as in the character of the mandible and mandible-palp, in the structure of the inner rami of the first and second pairs of thoracic feet, and in the form of the fifth pair. Three species belong to this genus, one of which is described below.

MEGARTHURUM PURPUROCINCTUM, Norman & T. Scott. (Pls. X. fig. 17; XII. fig. 10; XIII. fig. 10; XIV. fig. 9; XVIII. fig. 6; XIX. fig. 1; XX. figs. 4, 5.)

1905. *Dactylopusia purpurocincta*, Norman & Scott, Ann. & Mag. Nat. Hist. ser. 7, vol. xv. p. 295.

Description of the female.—Body depressed and expanded as in *Dactylopodella flava* (Claus); length about $\cdot 5$ mm. ($\frac{1}{50}$ of an inch). Seen from above the cephalic segment is broadly and evenly rounded in front and is about as long as the remaining thoracic segments. The three segments immediately posterior to the cephalon are of a dark purple-brown colour, but the colour of the rest of the body is light yellow (Pl. XIX. fig. 1).

The antennules are short, moderately stout, and apparently only seven-jointed (Pl. XIII. fig. 10); the first and second joints, which are robust, are longer than the others, while the penultimate joint is small; the formula shows approximately the lengths of the various joints:—

Proportional lengths of the joints	....	14	13	8	8	5	3	7
Numbers of the joints	.....	1	2	3	4	5	6	7

Antennæ moderately stout, outer ramus slender, elongated and biarticulate (Pl. XVIII. fig. 6).

Mandibles narrow; basal joint of mandible-palp dilated, and furnished with two moderately long branches of nearly equal length, the lower one being armed with two strong spines situated in the middle of the external margin, in addition to several setæ, as shown in the drawing (Pl. X. fig. 17).

The second maxillipeds are stout and armed with a moderately short terminal claw (Pl. XIII. fig. 10).

The first pair of thoracic feet are moderately short and robust; the outer ramus, which is considerably shorter than the inner, is furnished with tolerably long spiniform and coarsely plumose marginal setæ; the inner ramus is two-jointed; the first joint is longer than the entire outer ramus, and is strongly dilated interiorly, but tapers towards the distal extremity; the end joint is small and armed with a stout but tolerably short terminal claw and an elongated seta (Pl. XIV. fig. 9).

The second, third, and fourth pairs are somewhat similar in structure to the same appendages in *Dactylopusia tishoides*.

The fifth pair are tolerably large; the basal or primary joint forms a broad quadrangular plate armed with five stout spines or spiniform setæ arranged as shown in the drawing (Pl. XX. fig. 4); the external margin is deeply notched near the middle, and to this notch the small secondary joint is articulated, this joint is narrow and is provided with two short stout setæ on the outer edge, two at the apex, and a small seta on the inner edge.

Furcal joints short.

Habitat. Salcombe, Devon; a single specimen was found in a gathering collected at this place in June 1875.

The form now described resembles generically two species of *Dactylopusia* (*D. laticaudata* and *D. amula*), recently described by I. C. Thompson and A. Scott, in their Report on the Copepoda collected by Professor W. A. Herdman at Ceylon in 1902* ; these species will now be included in the same genus with that described here, viz. *Megarthurus*.

It should be mentioned that in their remarks on these two Ceylon species the authors stated that both might some time or other require a separate genus for their reception,

* Report to the Government of Ceylon on the Pearl Oyster Fisheries of the Gulf of Manaar, by Prof. W. A. Herdman. Supplementary Report VII. (Copepoda), by I. C. Thompson and A. Scott (pub. by the Royal Society, 1903), p. 271, pl. xi. figs. 1-8; and figs. 9-12.

though they preferred for the present to leave them in the genus *Dactylopusia* to which they were ascribed.

WESTWOODIA NOBILIS (Baird).

1845. *Arpacticus nobilis*, Baird, Trans. Berw. Nat. Club, vol. ii. p. 155.
 1850. *Arpacticus nobilis*, Baird, p. 214, pl. xxviii. figs. 2, 2 a-c.
 1880. *Westwoodia nobilis*, Brady, vol. ii. p. 141, pl. lxiii. figs. 1-13.

This species has also been recorded by Dr. Brady from near St. Agnes, Scilly Islands. The following are some of the localities where *Westwoodia nobilis* was obtained by A. M. N.:—Salcombe in 1875; between tide-marks at Exmouth in 1884; at Beggars Island, Plymouth, in 1889; Plymouth Sound in August, and at Fowey, Cornwall, in May, 1903.

PSEUDOTHALESTRIS ANDREWII (T. Scott).

1894. *Pseudowestwoodia Andrewi*, T. Scott, 12th Rept. Fishery Board for Scotland, pt. iii. p. 257, pl. ix. figs. 21-29.

This small but quite distinct species occurred sparingly near Chequer Buoy and other places in Plymouth Sound.

PSEUDOTHALESTRIS PYGMÆA (T. & A. Scott).

1895. *Pseudowestwoodia pygmæa*, T. & A. Scott, Ann. & Mag. Nat. Hist. ser. 6, vol. xv. p. 55, pl. vi. figs. 8-16.

Salcombe, July 7th, 1875; Starcross, June 23rd, 1884. Also at Fowey, Cornwall, among corallines and small weeds; and New Grimsby and St. Mary's Harbours, Scilly Islands, May 1903.

HARPACTICUS CHELIFER (O. F. Müller). (Pl. XII. fig. 11; Pl. XVII. fig. 9.)

1776. *Cyclops chelifer*, O. F. Müller, Zool. Dan. Prodr. 2413.
 1850. *Arpacticus chelifer*, Baird, p. 212, pl. xxix. figs. 2, 3, 3 a-g.
 1880. *Harpacticus chelifer*, Brady, vol. ii. p. 146, pl. lxiv. figs. 19, 20; lxx. figs. 1-15 (but not figs. 8, 10, and 13).
 1904. *Harpacticus chelifer*, G. O. Sars, p. 49, pls. xxvii., xxviii.

This species occurred very sparingly, and especially the form which is described and figured by Claus in his work 'Die freilebenden Copepoden.' This form differs from others sometimes ascribed to *H. chelifer* in having the antennules (anterior antennæ) composed of eight joints: four moderately stout and elongated, and four small ones (Pl. XII. fig. 11). It also differs in the structure of the fifth thoracic feet of the female. In this form the fifth feet of the female have the

inner portion of the basal joint scarcely produced and furnished with one very small and three moderately long and plumose setæ (Pl. XVII. fig. 9). The secondary joint is broadly ovate, being about one third longer than broad, and widest near the proximal end; the apex is obliquely truncated and provided with one small and four moderately elongated setæ, as shown by the drawing.

HARPACTICUS FLEXUS, Brady & Robertson.

1873. *Harpacticus flexus*, Brady & Robertson, Ann. & Mag. Nat. Hist. ser. 4, vol. xii. p. 134, pl. ix. figs. 17-21.

1880. *Harpacticus flexus*, Brady, vol. ii. p. 152, pl. lxiv. figs. 12-18.

1904. *Harpacticus flexus*, G. O. Sars, p. 53, pl. xxx. fig. 2.

The only specimens were obtained in a gathering from Padstow, Cornwall, collected in May 1903. Dr. Brady records this species from the Scilly Islands. Though this is comparatively a small form, it is readily distinguished by the form of the second maxillipeds.

HARPACTICUS UNIREMIS, Kröyer. (Pls. XII. fig. 12; XVIII. fig. 8.)

1838-1843. *Harpacticus uniremis*, Kröyer in "Gaimard, Voyages en Scandinavie &c.," pl. xliii. fig. 1 a-p.

1884. *Harpacticus chelifer* var. *arcticus*, Poppe, "Im nördlichen Stillen Ocean und Bähringsmeer gesammelten freilebenden Copepoden," Archiv f. Naturgesch. p. 296, pls. xxiii. figs. 1, 2, 4-7; xxiv. figs. 1-7, 9, 10.

1904. *Harpacticus uniremis*, G. O. Sars, p. 51, pl. xxix.

A number of specimens were obtained which appear to belong to *H. uniremis* of Kröyer. The antennules of this form, as in the last, are composed of nine joints. The primary joints of the fifth thoracic feet of the female are broadly foliaceous, and the inner portion which reaches to near the middle of the secondary joint bears four stout spiniform setæ on its broadly but irregularly rounded extremity. The secondary joint is broadly triangular, and is furnished with five stout setæ, one near the distal end of the inner margin, two at the apex, and two on the outer margin, as shown in the drawing (Pl. XVIII. fig. 8). The whole armature of the fifth pair is coarsely setose.

HARPACTICUS OBSCURUS, T. Scott.

1895. *Harpacticus obscurus*, T. Scott, 13th Report Fishery Board for Scotland, p. 170, pl. iv. figs. 4-12.

This small species was found in many localities: Salcombe,

1875 and 1903 ; Starcross, 1880 ; Cawsand Bay and other parts of Plymouth Sound, and also between tide-marks ; Fowey ; St. Mary's Sound and New Grimsby Harbour, Scilly Isles.

TIGRIOPUS FULVUS (S. Fischer).

1860. *Harpacticus fulvus*, S. Fischer, "Beitr. z. Kenntn. d. Entom.," Abhandl. d. bayer. Akad. d. Wiss. München, vol. viii. p. 656, pl. i. figs. 30-33 ; pl. ii. figs. 34-39.

1869. *Tigriopus Lilljeborgii*, Norman, Brit. Assoc. Rep. for 1868, p. 296.

1880. *Harpacticus fulvus*, Brady, vol. ii. p. 149, pl. lxiv. figs. 1-11.

1904. *Tigriopus fulvus*, G. O. Sars, p. 55, pls. xxxi., xxxii.

It is also *Harpacticus eurticornis* of Boeck ; *Harpacticus crassicornis*, Brady & Robertson MS. : and *Harpacticus chelifér*, Lilljeborg.

Moderately frequent in rock-pools at and above high-water mark at Plymouth.

ZAUS SPINATUS, Goodsir.

1845. *Zaus spinatus*, Goodsir, Ann. & Mag. Nat. Hist. vol. xvi. p. 326, pl. xi. figs. 1-8.

1880. *Zaus spinatus*, Brady, vol. ii. p. 153, pl. lxvi. figs. 1-9.

1904. *Zaus spinatus*, G. O. Sars, p. 57, pl. xxxi.

Observed at the following among other localities :—Salcombe (1875 and 1903) ; Starcross (1880) ; Plymouth, among weeds near low water ; Fowey, Cornwall ; New Grimsby Harbour and St. Mary's, Scilly Islands.

ZAUS GOODSIRI, G. S. Brady.

1863. *Zaus ovalis* (*viz* Goodsir), Claus, p. 146, pl. xxii. fig. 18, pl. xxiii. figs. 11-18.

1880. *Zaus Goodsiri*, Brady, vol. ii. p. 156, pl. lxvi. figs. 10-13.

1904. *Zaus Goodsiri*, G. O. Sars, p. 59, pl. xxxv.

A single specimen of this fine species was obtained in a gathering collected near Starcross ; and in another from near Duke Buoy, Plymouth.

ALTEUTHA DEPRESSA, Baird.

1850. *Alteutha depressa*, Baird, p. 216, pl. xxx. figs. 1, 2.

1880. *Peltidium crenulatum*, G. S. Brady, vol. ii. p. 163, pl. lxxii. figs. 6-15.

Salcombe ; Starcross ; Plymouth ; Fowey, Cornwall ; and the Scilly Islands.

ALTEUTHA INTERRUPTA (Goodsir).

1880. *Peltidium interruptum*, Brady, vol. ii. p. 162, pl. lxxi. figs. 4-15.
 1904. *Alteutha interrupta*, G. O. Sars, p. 62, pls. xxxvi., xxxvii.

This is *Alteutha bopyroides*, Claus, *Alteutha norregica*, Boeck, and *Peltidium conophorum*, Poppe.

Not common ; Starcross and Plymouth.

EUPELTE PURPUROCINCTA (Norman).

1869. *Alteutha purpurocincta*, Norman, Brit. Assoc. Rept. for 1868, p. 298.
 1880. *Peltidium depressum*, Brady, vol. ii. p. 160, pl. lxxii. figs. 1-5.
 1904. *Alteutha depressa*, G. O. Sars, p. 64, pl. xxxviii.

Taken very sparingly at Starcross and Exmouth, and also in Plymouth Sound.

PELTIDIUM PURPUREUM, Philippi.

1839. *Peltidium purpureum*, Philippi, Archiv f. Naturgesch. Jahrg. 5, p. 131, pl. iv. figs. 12, 13.
 1904. *Peltidium purpureum*, G. O. Sars, p. 66, pls. xxxix., xl.

A single specimen of this rare species was obtained in a tow-net gathering from Salcombe, collected July 2nd, 1875.

PELTIDIUM CONSPICUUM, Norman & T. Scott. (Pls. XI. fig. 9; XIV. fig. 11; XV. fig. 6; XIX. fig. 4.)

1905. *Peltidium conspicuum*, Norman & Scott, Ann. & Mag. Nat. Hist. ser. 7, vol. xv. p. 296.

A single specimen of a *Peltidium* which appears to be undescribed was obtained in New Grimsby Harbour, Scilly Islands, on 23rd May, 1903. It was of a uniform dark purplish or ruby colour, and was therefore quite a conspicuous object in the gathering in which it occurred.

P. conspicuum has a general resemblance to *P. purpureum*, but is rather larger, and the carapace wants the pellucid areas so characteristic of that species, but is on the contrary of a uniformly dense colour.

It measures about 1·3 mm. ($\frac{1}{10}$ of an inch) in length. The rostrum is broadly truncated, not much produced, and has the anterior truncated edge obscurely tridentate. Figure 4, Pl. XIX., shows a dorsal view of the specimen.

The antennules are short, moderately stout, and composed of six joints ; the first three joints, which are subequal, are together about twice the entire length of the last three ; the penultimate joint is very small (Pl. XV. fig. 6).

The antennæ and other appendages of the cephalothorax are similar to those of *Peltidium purpureum*.

The first pair of legs are also somewhat like the same pair in that species, but the first and second joints of the outer branch, which are nearly of equal length, are each of them furnished with a short seta near the middle of the outer margin and a similar seta springs from near the distal end of the inner margin of the second joint; the end joint is very short, and is armed with terminal claw-like spines as shown in the drawing (Pl. XIV. fig. 11). The inner branch is stout and two-jointed; a seta springs from the distal end of the inner margin of the first joint, while the second joint is furnished with three terminal setæ—one near the end of the inner margin and two at the apex.

The second, third, and fourth pairs of legs appear to resemble the same appendages in *Peltidium purpureum*.

The fifth pair appear also to be similar to those of that species, but are rather smaller (Pl. XI. fig. 9).

The first segment of the abdomen forms a trilobed plate which entirely overlaps not only the posterior abdominal segments but also the furcal joints, and in this respect our specimen differs very markedly from other described species, in which the last abdominal segment and furcal joints are exposed.

This specimen does not agree with any described species known to us; and the more obvious characters by which it may be distinguished are its uniform dense colour, its broad and obscurely tridentate rostrum, and the large trilobed first abdominal segment.

Habitat. The Scilly Isles.

PORCELLIDIUM FIMBRIATUM, Claus.

1863. *Porcellidium fimbriatum*, Claus, p. 140, pl. xxii. fig. 1.

1880. *Porcellidium fimbriatum*, Brady, vol. ii. p. 167, pl. lxx. figs. 1-4.

1904. *Porcellidium fimbriatum*, G. O. Sars, p. 76, pls. xlv., xlv.

Salcombe, dredged, June 30th, 1875. New Grimsby Harbour, Scilly Isles, May 23rd; and near Chequer Buoy, Plymouth, August 23rd, 1903.

PORCELLIDIUM VIRIDE (Philippi).

1840. *Thyone viride*, Philippi, Archiv für Naturgesch. Jahrg. 6, p. 190, pl. iv. fig. 2.

This species was taken in the same gathering with the previous one in New Grimsby Harbour, Scilly Isles; and

also at Plymouth amongst weeds at low water of spring-tides, August 22nd, 1903.

PORCELLIDIUM TENUICAUDA, Claus.

1860. *Porcellidium tenuicauda*, Claus, Beitr. z. Kennt. d. Entomost., i. Heft, p. 6, pl. ii. figs. 10-18.

1880. *Porcellidium tenuicauda*, Brady, vol. ii. p. 166, pls. lxix. figs. 10-13; lxx. fig. 5.

1889. *Porcellidium tenuicauda*, Claus, Copepodenstudien, i. Heft, Peltidien, p. 33.

Porcellidium dentatum, Claus, is the young of this species.

This interesting and rare form was not observed in the gatherings examined by us, but Dr. Brady records having dredged a specimen off St. Agnes, Scilly Islands, in a depth of ten fathoms.

PORCELLIDIUM LECANOIDES, Claus. (Pls. XIV. fig. 12; XV. fig. 5; XIX. fig. 3; XX. fig. 7.)

1889. *Porcellidium lecanoides*, Claus, Copepodenstudien, i. Heft, Peltidien, p. 33, pl. ix. figs. 1-33.

A single specimen of this *Porcellidium* was taken at the mouth of the River Yealm, South Devon, 1889. Though this specimen approximates somewhat closely to *P. fimbriatum* in the form of the caudal lamellæ, the armature of these appendages agrees better with that of the caudal lamellæ of the species to which the specimen is ascribed and which is represented by the drawing (Pl. XIX. fig. 3; see also Pl. XX. fig. 7).

In this specimen the antennules are short, moderately stout, and composed of six joints; the first three joints are large but the last three are short; the third joint is about equal to the first but is only about two-thirds the length of the second, the fourth is scarcely more than half the length of the preceding joint, while the two end joints are subequal and very small (Pl. XV. fig. 5).

The fifth pair of thoracic feet are in the form of moderately elongated and narrowly subtriangular plates (Pl. XIV. fig. 12), but which do not reach to the extremity of the caudal segments.

Caudal segments moderately narrow and subcylindrical, extending distinctly beyond the apices of the abdominal segments, and each furnished with about five short but moderately stout setæ on the somewhat obliquely truncated extremity; one of the setæ springs from the outer and another from the inner angle, while the other three are situated on

the exterior half of the distal edge ; the second seta from the outside is rather longer than the others (Pl. XX. fig. 7).

Length of the specimen .82 mm. (about $\frac{1}{30}$ of an inch).

PSAMATHE LONGICAUDA, Philippi.

1840. *Psamathe longicauda*, Philippi, Wiegman. Archiv f. Naturgesch. Jahrg. 6, p. 189, pl. iv. fig. 1.

1866. *Scutellidium tishoides*, Claus, Die Copepodenfauna von Nizza, p. 21, pl. iv. figs. 8-15.

1880. *Scutellidium tishoides*, Brady, vol. ii. p. 175, pl. lxviii. figs. 1-10.

1905. *Psamathe longicauda*, G. O. Sars, p. 83, pl. xlix.

This was observed very sparingly in gatherings from Salcombe, Plymouth, and St. Mary's, Scilly Islands. It is recorded from Porcraza Bay, Scilly Islands, by Dr. Brady.

ASPIDISCUS FASCIATUS, Norman.

1869. *Aspidiscus fuscatus*, Norman, British Assoc. Report for 1868, p. 298.

1905. *Aspidiscus fuscatus*, G. O. Sars, p. 81, pl. xlviii.

What appears to be this species was found in one or two places, but not very plentifully ; it occurred in samples from Exmouth, Plymouth, and the Harbour at St. Mary's, Scilly Islands.

Genus TISBE, Lilljeborg.

There is some difficulty with respect to the name of this genus. The genus *Idya*, Philippi, 1843, cannot be used, as there is a genus of earlier date, *Idya*, Fréminville, 1809, still in use in Acalephæ. *Tisbe*, Lilljeborg, 1853, would have been more correctly written *Thisbe* ; but there is a *Thisbe*, Hübner, among Lepidoptera, 1816. It appears to us therefore that the genus should be retained with the spelling which Lilljeborg gave it, and which is sufficient to distinguish it from *Thisbe*.

TISBE FURCATA (Baird).

1837. *Cyclops furcatus*, Baird, Mag. Zool. and Bot. vol. i. p. 330, pl. ix. figs. 26-28.

1850. *Canthocamptus furcatus*, Baird, p. 210, pls. xxv. figs. 1, 2 ; xxx. figs. 4, 5, 6.

1880. *Idya furcata*, Brady, vol. ii. p. 172, pl. lxvii. figs. 1-11.

1905. *Idya furcata*, G. O. Sars, p. 88, pls. li., lii. fig. 1.

Generally distributed. Exmouth, Salcombe, Plymouth, Fowey, and Scilly Isles.

TISBE LONGICORNIS (T. & A. Scott).

1895. *Idya longicornis*, T. & A. Scott, Ann. & Mag. Nat. Hist. ser. 6, vol. xv. p. 461, pl. xvii. figs. 10-17.

1905. *Idya longicornis*, G. O. Sars, p. 92, pl. liv. fig. 1.

A single specimen was obtained from Starcross, June 20th, 1884; and several from New Grimsby Harbour and St. Mary's, Scilly Islands, collected in May; and from Cawsand Bay and off Jenny Cliff Bay, Plymouth, in August 1903. This species is larger and has longer antennules than *Tisbe furcata*.

TISBE MINOR (T. & A. Scott).

1896. *Idya minor*, T. & A. Scott, Ann. Scot. Nat. Hist. (1896) p. 228, pl. iv. figs. 11-17.

1905. *Idya minor*, G. O. Sars, p. 90, pl. lii. fig. 2.

Obtained at Salcombe, Starcross, Plymouth; and New Grimsby Harbour, St. Mary's, and Tresco, Scilly Islands, but not very common.

Tribe III. CYCLOPOIDA.

Fam. 1. CYCLOPIDÆ.

OITHONA SIMILIS, Claus.

1866. *Oithona similis*, Claus, Die Copepodenfauna von Nizza, p. 14.

1892. *Oithona similis*, Giesbrecht, pp. 537 & 548, pl. xxxiv. figs. 18, 19, 21, 36-39; pl. xlv. figs. 3, 5, 8-11.

Salcombe, 1875. Starcross, 1880 and 1884. Off Falmouth, 1889; and in several of the tow-net gatherings collected in the neighbourhood of Plymouth.

The species recorded here appears to agree fairly well with the description and figures of *Oithona similis* given by Dr. Giesbrecht. That author considers that this species and *O. helgolandicus*, Claus, are probably identical, but Professor G. O. Sars* asserts that the forms so named are distinct. A careful revision of the species may be necessary ere this difficulty is cleared up; meanwhile we retain the name adopted by Giesbrecht, who, in the work referred to above, discusses fully the question of the synonymy of this and other species.

* The Norwegian North-Polar Exped. 1893-96, No. V. Crustacea, by G. O. Sars, p. 119 (1900).

OITHONA NANA, Giesbrecht.

1892. *Oithona nana*, Giesbrecht, pp. 537 & 549, pl. iv. fig. 8; pl. xxxiv. figs. 10, 11, 20, 24, 26, 34, 35, 42; pl. xlv. figs. 2, 4, 6.

Mr. G. P. Farran, who added this species to the British fauna, from specimens found off the West of Ireland*, has lately observed the same form at Plymouth. It has also been obtained in one or two gatherings from the neighbourhood of Plymouth as well as in one from Whitsand Bay collected by A. M. N. in August 1903.

Oithona nana appears to have a fairly wide distribution in the British seas, having been observed in plankton-samples from the north-east of Scotland, as well as from the North Sea between England and the Netherlands.

OITHONA PLUMIFERA, Baird.

1843. *Oithona plumifera*, Baird, Notes on British Entom., Zoologist, vol. i. pp. 193-197.

1892. *Oithona plumifera*, Giesbrecht, pp. 537 & 548, pl. iv. fig. 10; pl. xxxiv. figs. 12, 13, 22, 25, 27, 28, 29, 32, 33, 44-47; pl. xlv. figs. 1, 7, 12-15.

Collected off the south coast of Cornwall; south of the Scilly Islands and off North Cornwall in 1903 (*Dr. L. H. Gough*).

CYCLOPINA LITTORALIS (G. S. Brady).

1872. *Cyclops littoralis*, Brady, Nat. Hist. Trans. Northumb. and Durham, vol. iv. p. 429, pl. xvii. figs. 9-14.

1878. *Cyclopina littoralis*, Brady, vol. i. p. 92, pl. xv. figs. 1-9.

This species occurred in gatherings from Salcombe, 1875, and Starcross, 1880; also from Plymouth Sound, near Chequer Buoy and in Cawsand Bay, and the vicinity of Fowey, Cornwall, in May and August 1903.

Dr. G. C. Bourne (vol. i. n. s. p. 150) also records *Cyclopina littoralis* from Plymouth; and Prof. G. S. Brady from the Scilly Islands.

CYCLOPINA GRACILIS, Claus.

1863. *Cyclopina gracilis*, Claus, p. 104, pl. x. figs. 9-15.

1878. *Cyclopina gracilis*, Brady, vol. i. p. 93, pl. xxiv B. figs. 1-9; vol. iii. pl. xci. figs. 10-11.

Obtained at Salcombe in 1875, and at Exmouth between

* Reptort Sea and Inland Fisheries of Ireland, pt. ii. (publ. 1903) p. 117.

tide-marks in June 1884. It occurred again at Salcombe in September 1903, and was also observed in Mill Bay, near Chequer Buoy, and in rock-pools at and above high-water mark in Plymouth Sound.

EURYTE LONGICAUDA, Philippi.

1843. *Euryte longicauda*, Philippi, Archiv f. Naturg. Jahrg. 9, p. 63, pl. iii. fig. 3 a-d.

1878. *Thorellea brunnea* (Boeck), Brady, vol. i. p. 95, pl. xvi. figs. 1-10.

Salcombe, June 1875 ; off Duke Buoy, Plymouth, and mouth of the Yealm, August 1889 ; Fowey, Cornwall, among *Corallina* in May, and Mill Bay, Cawsand Bay, and other gatherings from Plymouth in August 1903, but nowhere common.

The following species of *Cyclops* have been observed :—

Species having antennules composed of 17 joints.

CYCLOPS STRENUUS, S. Fischer.

1851. *Cyclops strenuus*, S. Fischer, "Beitr. z. Kenntn. St. Petersburg Cyclopiden," Bull. Soc. Imp. des Nat. Moscou, vol. xxiv. p. 419, pl. ix. figs. 12-21.

1878. *Cyclops strenuus*, Brady, vol. i. p. 104, pl. xix. figs. 1-7.

1878. *Cyclops pulchellus*, id. ibid. p. 107, pl. xvii. figs. 1-3.

1891. *Cyclops strenuus*, Brady, "Revision British Cyclopidae and Calanidae," Nat. Hist. Trans. Northumberland, Durham, and Newcastle-upon-Tyne, vol. xi. p. 8, pl. ii. figs. 1-4.

1891. *Cyclops abyssorum*, id. ibid. p. 8, pl. iii.

1901. *Cyclops strenuus*, Lilljeborg, p. 28, pl. ii. figs. 20-25.

1892. *Cyclops strenuus*, Schmeil, I. p. 39, pl. ii. figs. 12-15.

Tresco and St. Mary's, Scilly Islands ; near Hayle, Cornwall ; Bradmere pool near Chagford, Devon, and various other localities within the district.

CYCLOPS BICUSPIDATUS, Claus.

1857. *Cyclops bicuspidatus*, Claus, Archiv f. Naturg. Jahrg. 22, 1 B, p. 209, pl. xi. figs. 6, 7.

1891. *Cyclops Thomasi*, Brady, l. c. p. 15, pl. vi. figs. 1-4.

1891. *Cyclops insignis*, id. ibid. p. 18, pl. vi. fig. 5.

1892. *Cyclops bicuspidatus*, Schmeil, I. p. 75, pl. ii. figs. 1-3, and Nachtrag, 1898, p. 149.

1901. *Cyclops bicuspidatus*, Lilljeborg, p. 11, pl. i. figs. 12-17 ; pl. ii. fig. 1.

In one or two places near St. Ives, Cornwall, in May 1905 (*R. Vallentin*!).

CYCLOPS VERNALIS, Fischer.

1853. *Cyclops vernalis*, Fischer, "Beitr. z. Kenntn. St. Petersburg Cyclopiden (Fortsetzung)," Bull. Soc. Imp. des Nat. Moscou, vol. xxvi. p. 90, pl. iii. figs. 1-5.
 1891. *Cyclops elongatus*, Brady, l. c. p. 5, pl. i. figs. 1-5.
 1892. *Cyclops vernalis*, Schmeil, l. p. 88, pl. ii. figs. 4-7.
 1901. *Cyclops vernalis*, Lilljeborg, p. 17, pl. ii. figs. 5-7.

Tresco, Scilly Islands ; Hayle, Cornwall ; the River Otter, and one or two other places in Devon.

CYCLOPS BISETOSUS, Rehberg.

1880. *Cyclops bisetosus*, Rehberg, "Beiträge z. Kenntn. der freilebenden Süßwasser-Copepoden," Abhand. Naturw. Ver. Bremen, vol. vi. p. 543.
 1891. *Cyclops bisetosus*, Schmeil, l. p. 94, pl. ii. figs. 8-11.
 1901. *Cyclops bisetosus*, Lilljeborg, p. 14, pl. ii. figs. 2-4.

In slightly brackish water at Exminster and Plymstock, and in marshy ground at Exmoor, Devon.

CYCLOPS VIRIDIS (Jurine) Fischer.

1820. *Monoculus quadricornis*, var. *viridis*, Jurine, Hist. des Monocles, p. 46, pl. iii. fig. 1.
 1878. *Cyclops gigas*, Brady, vol. i. p. 105, pl. xx. figs. 1-16.
 1892. *Cyclops viridis*, Schmeil, l. p. 97, pl. viii. figs. 12-14.
 1901. *Cyclops viridis*, Lilljeborg, p. 8, pl. i. figs. 6-11.

The River Otter, Topsham Marshes, Canal at Newton Abbot and other places in Devon ; in one or two places in Cornwall ; and at Tresco, Scilly Islands.

CYCLOPS ANNULICORNIS, Koch.

1820. *Monoculus quadricornis albidus*, Jurine, l. c. p. 44, pl. ii. figs. 10 & 11.
 1838. *Cyclops annulicornis*, Koch, Deutschlands Crustaceen, Myriapoden und Arachniden, Heft 21, fig. 6.
 1878. *Cyclops tenuicornis*, Brady, vol. i. p. 102, pl. xviii. figs. 1-10.
 1892. *Cyclops albidus*, Schmeil, l. p. 128, pl. i. figs. 8-14 b, and pl. iv. fig. 15.
 1901. *Cyclops albidus*, Lilljeborg, p. 49, pl. iii. figs. 21, 22.

This species was present in most of the freshwater ponds, ditches, &c. examined, chiefly in Devon, but also in Cornwall.

CYCLOPS SIGNATUS, Koch.

1820. *Monoculus quadricornis fuscus*, Jurine, l. c. p. 47, pl. ii. fig. 2.
 1838. *Cyclops signatus*, Koch, Deutschlands Crustaceen, Myriapoden und Arachniden, Heft 21, fig. 8.
 1878. *Cyclops signatus*, Brady, vol. i. p. 100, pl. xvii. figs. 4-12.
 1891. *Cyclops signatus*, Brady, l. c. p. 6, pl. ii. fig. 5.

1892. *Cyclops fuscus*, Schmeil, I. p. 123, pl. i. figs. 1-7 b; pl. iv. fig. 16.

1901. *Cyclops fuscus*, Lilljeborg, p. 44, pl. iii. figs. 12-15.

The River Otter and Slapton Lea, Devon.

Antennules composed of 16 joints.

CYCLOPS LANGUIDUS, G. O. Sars.

1862. *Cyclops languidus*, G. O. Sars, Oversigt af de indenlandske Ferskvandscopepoder, p. 40 (separate copy).

1892. *Cyclops languidus*, Schmeil, I. p. 84, pl. iii. figs. 9-17.

1901. *Cyclops languidus*, Lilljeborg, p. 59, pl. iv. figs. 8, 9.

The only gathering where this species was observed was from some marshy ground on Exmoor about 1450 feet above sea-level, May 13th, 1904.

Antennules composed of 12 joints.

CYCLOPS SERRULATUS, Fischer.

1851. *Cyclops serrulatus*, Fischer, "Beitr. z. Kennt. St. Petersburg Cyclopiden," Bull. Soc. Imp. des Nat. Moscou, vol. xxiv. p. 423, pl. x. figs. 22, 23*, 26-31.

The form generally regarded by British carcinologists as Fischer's *Cyclops serrulatus* occurred in most of the fresh-water gatherings collected throughout Devon and Cornwall.

It is probable, as Prof. Lilljeborg has recently shown*, that more than one species may be included here under the name of *Cyclops serrulatus*; and one of the forms described by that author as *Cyclops varius* seems to be distinguished chiefly from typical *C. serrulatus* by the margin of the last joint of the antennules being hyaline, smooth, and without either cilia or striations†: whereas in *C. serrulatus* the margin of this joint bears a fringe of minute cilia more or less throughout its entire length. Three varieties of *C. varius* are described by Lilljeborg, viz. *speratus*, *proximus*, and *brachyurus*.

A form which we think undoubtedly represents the variety *brachyurus* is frequent in a number of the Devon and Cornwall gatherings. It is readily distinguished by the rather short and stout furcal joints. The variety referred to as a mountain form in the Monograph of British Copepoda by Prof. G. S. Brady (vol. i. p. 100), and represented by figure 7, plate xxii.,

* Pp. 81-91 (1901).

† "Antennæ articulis 12 compositæ. Margo posterior articulorum eorum ultimorum limbo hyalino lævi et sine aculeis vel striis."

appears to be this form. The variety *speratus*, which has the furcal joints moderately long and proportionately more slender, has been noticed in gatherings from a pond at Kingsteignton, Slapton Lea, and the canal at Newton Abbot. The typical *C. serrulatus* appeared to be less frequent than were the varieties referred to, but the points which distinguish *C. varius* from *C. serrulatus* are so minute as to indicate a very close relationship between them; and, moreover, as *C. varius* itself comprises no fewer than three varieties, we have thought it best, having indicated the different varieties observed, to retain them all under the specific name established by Fischer.

CYCLOPS PRASINUS, Fischer. (Pl. XXI, figs. 9-11.)

1860. *Cyclops prasinus*, Fischer, "Beitr. z. Kenntn. d. Entom.,"
Abhand. d. bay. Akad. d. Wiss. München, vol. viii. p. 652,
pl. xx. figs. 19-26a.

1892. *Cyclops prasinus*, Schmeil, I. p. 150, pl. v. figs. 1-5.

Slapton Lea, Devon, in June 1904; and a moor pond near the middle of some waste ground at St. Erth, Cornwall,—in this gathering the species was moderately abundant. (Pl. XXI. figs. 9, 10, 11, are drawings of the antennule, foot of fifth pair, and of the abdomen and furcal joints.)

CYCLOPS VENUSTUS, sp. n. (Pl. XVI. fig. 11 ; Pl. XVIII.
fig. 9 ; and Pl. XX. figs. 1-3)

The species described below resembles *Cyclops vernalis*, Fischer, in its general appearance and size and in the structure of the fifth pair of thoracic feet, but differs very distinctly in the structure of the antennules.

The length of the female represented by the drawing (Pl. XX, fig. 1) measures 1.4 mm. (nearly $\frac{1}{18}$ of an inch), exclusive of the tail setæ.

The antennules, which are moderately stout and composed of twelve joints, scarcely reach beyond the end of the cephalothoracic segment (Pl. XX. fig. 2). The third and sixth joints are very small, while the first, eighth, and ninth are considerably larger than any of the others, as shown in the annexed formula, which exhibits approximately the proportional lengths of all the joints:—

Proportional lengths of

the joints 30.7.5.9.8.5.9.20.16.9.11.12

Numbers of the joints..	1	2	3	4	5	6	7	8	9	10	11	12
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The mouth-organs and swimming-feet are similar to the same appendages in *Cyclops vernalis*. The rudimentary fifth

pair also resemble those of that species; the basal joint is about twice the width of the second joint; the outer distal angle is blunt, pointed at the apex and slightly notched below, and is furnished with a moderately long, finely plumose seta: the second joint is narrow, rather longer than broad, the inner margin, which is slightly rounded, is notched near the distal end for the insertion of a minute sharp-pointed tooth-like spine, while a moderately long, finely plumose seta—similar to the one on the basal joint—springs from the apex, as shown in the drawing (Pl. XX. fig. 3).

The furcal joints are fully as long as the last two abdominal segments taken together; a small seta springs from near the distal end of the outer margin of each joint, as in *C. vernalis*, and there is also the usual number of terminal setæ (Pl. XVIII. fig. 9).

In all the specimens examined the ovisacs were comparatively small, but they contained moderately large ova, as shown in Pl. XX. fig. 1.

As we are at present unable to identify this form with any species already described, the name we propose for it is *Cyclops venustus*.

This species occurred in a gathering from marshy ground on Exmoor, at an altitude of 1450 feet above the sea, collected on May 13th, 1904.

Antennules composed of 11 joints.

CYCLOPS AFFINIS, G. O. Sars.

1862. *Cyclops affinis*, G. O. Sars, Oversigt af de indenlandske Ferskvandscopepoder, p. 47 (separate copy).

1891. *Cyclops affinis*, Brady, l. c. p. 21, pl. viii. figs. 1-6.

1892. *Cyclops affinis*, Schmeil, l. p. 157, pl. vii. figs. 1-7.

1901. *Cyclops affinis*, Lilljeborg, p. 98, pl. vi. figs. 15, 16.

Sparingly in the River Otter and Topsham Marshes, Devon, collected June 29th, 1904; also obtained in a gathering from Slapton Lea, Devon.

CYCLOPS DIAPHANUS, Fischer.

1853. *Cyclops diaphanus*, Fischer, "Beitr. z. Kenntn. St. Petersburg Copepoden (Fortsetzung)," Bull. Soc. Imper. des Natur. Moscou, vol. xxvi. p. 93, pl. iii. figs. 6-12.

1862. *Cyclops nanus*, G. O. Sars, Oversigt af de indenlandske Ferskvandscopepoder, p. 42 (separate copy).

1901. *Cyclops diaphanus*, Lilljeborg, p. 63, pl. iv. figs. 13, 15.

This small *Cyclops* occurred very sparingly in a gathering from Topsham Marshes, Devon, collected June 29th, 1904.

Antennules composed of 8 joints.

CYCLOPS FIMBRIATUS, Fischer.

1853. *Cyclops fimbriatus*, S. Fischer, "Beitr. z. Kennt. St. Petersburg Copepoden (Fortsetzung)," Bull. Soc. Imp. Nat. Moscou, vol. xxvi. p. 94, pl. iii. figs. 19-28, 30.
 1878. *Cyclops crassicornis*, Brady, vol. i. p. 118, pl. xxiii. figs. 1-6.
 1891. *Cyclops fimbriatus*, Brady, l. c. p. 25, pl. ix. fig. 1.
 1892. *Cyclops fimbriatus*, Schmeil, l. p. 161, pl. vii. figs. 8-13.
 1901. *Cyclops fimbriatus*, Lilljeborg, p. 94, pl. vi. figs. 12-14.

In pools near Bennetts Cross, Dartmoor, 1550 feet above the sea; Canal at Newton Abbot; Bradmere Pool near Chagford, a pond at Ilfracombe; River Otter, &c., all in Devon. This species has also been recorded from Tresco, Scilly Islands, by Dr. G. S. Brady.

Antennules composed of 6 joints.

* *HALICYCLOPS ÆQUOREUS* (Fischer).

1860. *Cyclops æquoreus*, Fischer, "Beitr. z. Kennt. der Entom.," Abhandl. d. bayer. Akad. d. Wiss. München, vol. viii. p. 654, pl. xx. figs. 26-29.
 1878. *Cyclops æquoreus*, Brady, vol. i. p. 119, pl. xix. figs. 8-10; pl. xxi. figs. 10-17.
 1898. *Cyclops æquoreus*, Schmeil, Nachtrag, p. 158.
 1901. *Cyclops æquoreus*, Lilljeborg, p. 102, pl. vi. figs. 17-19.

Cattewater, Plymouth, August 1889; outside the Harbour at Fowey, Cornwall, May 1903; brackish water, Plymstock; Mill Bay and in rock-pools at and above high-water at Plymouth, and in brackish pools at Barnstaple, &c.

Fam. 2. ASTEROCHERIDÆ.

ASTEROCHERES ECHINICOLA (Norman).

1869. *Ascomyzon echinicola*, Norman, "Last Report Dredging Shetland," Brit. Assoc. Rept. for 1868, p. 300.
 1880. *Cyclopicera lata*, Brady, vol. iii. p. 56, pl. lxxxix. fig. 12; pl. xc. figs. 11-14.
 1899. *Asterocheres echinicola*, Giesbrecht, "Die Asterocheriden" (Fauna und Flora des Golfes von Neapel), pp. 74, 100, pl. ii. figs. 18-21.

This was observed very sparingly in gatherings from the mouth of the River Yealm, 1889; from roots of *Laminaria* and among *Hydrozoa* at extreme low-water in the neighbourhood of Plymouth in August, and at Salcombe in September, 1903.

Found living on *Echinus esculentus* and sponges.

* *Halycyclops*, Norman: see Canon Norman on "New Generic Names" in Ann. & Mag. Nat. Hist. ser. 7, vol. xi. pp. 367-369 (April 1903).

ASTEROCHERES BOECKI (Brady).

1880. *Artotrogus Boeckii*, Brady, vol. iii. p. 60, pl. xci. figs. 1-9.

1899. *Asterocheres Boccki*, Giesbrecht, Die Asterocheriden, pp. 70, 100, pl. i. fig. 2; pl. ii. figs. 22-31.

With *A. echinicola* in the gathering from the mouth of the River Yealm, 1889, and in another from Salcombe collected on September 8th, 1903; apparently rare.

ASTEROCHERES SUBERITIS, Giesbrecht.

1897. *Asterocheres suberitis*, Giesbrecht, Zool. Anzeiger, Bd. 20, pp. 9-14, 17-24.

1899. *Asterocheres suberitis*, Giesbrecht, Die Asterocheriden, pp. 1, 6, 70, 100, pl. ii. figs. 1-17.

This species occurred in a gathering from Salcombe collected on September 9th, 1903. Its usual habitat is the water-passages of *Suberites domuncula*, and probably also of other sponges.

DERMATOMYZON NIGRIPES (Brady & Robertson).

1876. *Cyclopicera nigripes*, Brady & Robertson, Brit. Assoc. Rept. for 1875, p. 197 (no description).

1880. *Cyclopicera nigripes*, Brady, vol. iii. p. 54, pl. lxxxix. figs. 1-11.

1899. *Dermatomyzon nigripes*, Giesbrecht, Die Asterocheriden, pp. 7, 9, 77, 102, pl. i. fig. 4; pl. v. figs. 1-14.

Salcombe in June 1875, and at the mouth of the River Yealm in August 1889; also more recently collected in Plymouth Sound.

RHYNCHOMYZON PURPURI CINCTUM (T. Scott).

1893. *Cyclopicera purpurocincta*, T. Scott, 11th Rept. Fishery Board for Scotland, pt. iii. p. 239, pl. iii. figs. 29-40.

1899. *Rhynchomyzon purpurocinctum*, Giesbrecht, Die Asterocheriden, pp. 10, 11, 74, 102, pl. i. fig. 11; pl. v. figs. 41-46; pl. x. fig. 23; pl. xi. figs. 1, 4-16, 29.

A single specimen of this distinct form was taken at Salcombe in June 1875, another near Starcross in June 1880, and a third occurred in a gathering from Salcombe collected September 1903. It appears to be widely but sparingly distributed.

COLLOCHERES GRACILICAUDA (Brady).

1880. *Cyclopicera gracilicauda*, Brady, vol. iii. p. 58, pl. lxxxiii. figs. 1-10.

1899. *Collocheres gracilicauda*, Giesbrecht, Die Asterocheriden, pp. 12, 79, 102, pl. i. fig. 3; pl. iii. figs. 40-45.

A single specimen from Plymouth Sound, collected on August 19th, and another from Salcombe, collected on September 9th, 1903.

ACONTIOPHORUS SCUTATUS (Brady & Robertson).

1873. *Solenostoma scutatum*, B. & R., Ann. & Mag. Nat. Hist. ser. 4, vol. xii. p. 141.

1899. *Acontiophorus scutatus*, Giesbrecht, Die Asterocheriden, pp. 12, 13, 81, pl. i. fig. 5; pl. iv. figs. 35-52.

Procured sparingly on several occasions, viz.: Salcombe in 1875 and 1903; near Starcross in 1880; at Exmouth; near Duke Buoy, 1889, and off Jenny Cliff Bay, Plymouth, in August 1903.

SCOTTOCHERES ELONGATUS (T. & A. Scott).

1894. *Acontiophorus elongatus*, T. & A. S., Ann. & Mag. Nat. Hist. ser. 6, vol. xiii. p. 145, pl. ix. figs. 15-20.

1899. *Scottocheres elongatus*, Giesbrecht, Die Asterocheriden, pp. 17, 82, 104, pl. iv. figs. 1-13.

One specimen from *Corallina*, near low-water at Plymouth, and another from material washed from *Pecten opercularis* near the same place in August 1903. Though this species has a wide distribution, it does not appear to be very common.

MESOCHERES, Norman & T. Scott.

Body somewhat similar to *Scottocheres* in general appearance, the cephalothorax seen from above being ovate in outline, while the abdomen is narrow and elongated. The antennules are composed of twenty-one joints, and their structure is similar to that of the antennules of *Asterocheres*; the antennæ also resemble those of that genus; the mandibles and maxillæ were imperfect and their structure could not be satisfactorily made out. First maxillipeds small but moderately stout, their terminal claw elongated and strongly hooked and bearing a long spine attached near the base. Second maxillipeds long and slender, and similar in structure to the same appendages in *Asterocheres*. The first four pairs of thoracic feet are somewhat similar to those of that genus. Fifth pair very small and apparently two-jointed.

This genus partakes of the characters of the two genera *Asterocheres* and *Scottocheres*, but differs from both as described above.

MESOCHERES ANGLICUS, Norman & T. Scott. (Pls. X. fig. 18; XI. fig. 10; XII. fig. 13; XIII. fig. 13; XIV. fig. 14; XIX. fig. 6; XX. fig. 8.)

1905. *Mesocheres anglicus*, Norman & Scott, Ann. & Mag. Nat. Hist. ser. 7, vol. xv. p. 298.

Description of the female.—Cephalothorax ovate, moderately robust and widest in the middle, the width being equal to rather more than half the length; the first segment is about one and a half times the entire length of the remaining segments. The abdomen, which is narrow and elongated as in *Scottocheres*, consists of three segments; the first is rather longer than the combined lengths of the other two, it is widest at the proximal end, and produced on each side into a hook-like process similar to the *Scottocheres* already mentioned; the anal segment is the smallest one, being only a little more than half the length of the preceding segment. The furcal joints, which are long and slender, are about four times as long as the last abdominal segment, and the outer margin of each joint is fringed with minute cilia, the principal apical setæ are only moderately elongated (Pl. XIX. fig. 6). The specimen represented by the figure measures .65 mm. (about $\frac{1}{38}$ of an inch).

The antennules are composed of twenty-one joints, and are similar in structure to those of *Asterocheres Boeckii*; a moderately stout sensory filament springs from the distal end of the eighteenth joint (Pl. XII. fig. 13).

The antennæ are three-jointed; the first is longer than the next two joints taken together, the third joint is small and bears one long and two short apical setæ. Secondary branch small, uniaarticulate, and furnished with one or two slender apical bristles (Pl. XIV. fig. 14).

The mandibles and maxillæ were damaged, and we are therefore unable to describe their structure.

The first maxillipeds consist each of a single short and moderately stout basal joint, which bears an elongated stout and strongly-curved terminal claw, while from near the base of the claw there springs a moderately long spine (Pl. X. fig. 18).

The second maxillipeds are long and slender, and similar in structure to the same appendages in *Asterocheres Boeckii* (Pl. XIII. fig. 13).

The first four pairs of thoracic feet are somewhat similar to those of the same *Asterocheres*, but their armature differs to some extent, especially the armature of the fourth pair. This pair is moderately stout, and the spines on the outer edge and apex of the outer branch, as well as the terminal

spine of the inner branch, are all large and broadly dagger-shaped, and, with the exception of the long apical spine of the outer branch, have both edges finely serrated, but the long spine referred to is serrated only on the outer edge. The first two joints of the outer branch have each one seta, and the third joint four on the outer margin; but, on the other hand, while the first joint of the inner branch bears one seta on the inner edge, the second and third joints have each two, and a similar seta also springs from a notch near the middle of the outer edge of the third joint, as shown in the drawing (Pl. XX. fig. 8).

The fifth pair are very small, and they each consist of two joints; a single seta springs from the outer distal angle of the basal joint, but the second joint, which is subrotundate in form, bears two or three setæ (Pl. XI. fig. 10).

Habitat. Plymouth Sound. A single specimen of this species occurred in a gathering collected on August 12th, 1903. The species appears to be parasitic. .

BRADYPONTIUS MAGNICEPS (Brady).

1880. *Artotrogus magniceps*, Brady, vol. iii. p. 61, pl. xciii. figs. 1-9.

1899. *Bradypontius magniceps*, Giesbrecht, Die Asterocheriden, pp. 27, 29, 88, 108, pl. vi. figs. 41-44.

A solitary specimen was captured near Duke Buoy, Plymouth, in July 1889. The species appears to be sparingly though fairly widely distributed.

DYSPONTIUS STRIATUS, Thorell.

1859. *Dyspontius striatus*, Thorell, Om Krustaceer af Slägtet Ascidia, p. 81, pl. xiv. fig. 22.

1880. *Dyspontius striatus*, Brady, vol. iii. p. 66, pl. xcii. figs. 1-13.

1899. *Dyspontius striatus*, Giesbrecht, Die Asterocheriden, pp. 33, 35, 90, 109, pls. i. fig. 10; vii. figs. 1-11; x. figs. 27, 36.

Amongst some dredged material from Salcombe, collected June 30th, 1875; in a small gathering from the mouth of the River Yealm in 1889; and in another from three miles N.W. of Eddystone Lighthouse, August 31st, 1903. Very few specimens were observed.

CALIGIDIUM VAGABUNDUM, Claus.

1889. *Caligidium vagabundum*, Claus, "Halfparasitische Copepoden," Arbeit. zool. Inst. Wien, vol. viii. p. 362, pl. i. figs. 1-7.

A single specimen in a gathering collected at the mouth of the River Yealm in August 1889.

Fam. 3. NICOTHOIDÆ.

NICOTHOE ASTACI, Audouin & H. Milne-Edwards.

1850. *Nicothoe astaci*, Baird, p. 307, pl. xxxiii. fig. 11.

1901. *Nicothoe astaci*, T. Scott, "Notes of Gatherings of Crustacea 'Garland,' &c.," 19th Ann. Report Fishery Board for Scotland, p. 254, pl. xvii. figs. 36-39; pl. xviii. figs. 21-26.

Mr. W. P. Cocks gave A. M. N. in 1853 specimens of *Nicothoe* which he had found on a lobster at Falmouth; and it has been taken recently at Plymouth (Biol. Lab.).

Fam. 4. CORYCÆIDÆ.

CORYCÆUS ANGLICUS, Lubbock.

1857. *Corycæus anglicus*, Lubbock, Ann. & Mag. Nat. Hist. ser. 2, vol. xx. p. 8 (separate copy), pl. xi. figs. 14-17.

1880. *Corycæus anglicus*, Brady, vol. iii. p. 34, pls. lxxxi. figs. 16-19; lxxxiii. figs. 11-15; lxxxiv. figs. 10-14.

1900. *Corycæus anglicus*, T. Scott, 18th Report Fishery Board for Scotland, p. 397, pl. xiii. figs. 1-14.

Starcross in 1884; Plymouth and Falmouth, June 1889 and 1903. Dr. Bourne (vol. i. n. s. p. 151) was the first to record it from the coast, and Dr. Gough commonly takes it in the tow-net. Giesbrecht synonymises this species with *Corycæus obtusus* of Dana.

CORYCÆUS VENUSTUS, Dana.

1892. *Corycæus venustus*, Giesbrecht, pp. 658, 674, 736, pls. iv. fig. 12; li. figs. 32-34, 47.

This is *C. limbatus* of Brady ('Challenger' Report), but not his *C. venustus*.

"Plymouth, November 1889, very rare" (Professor P. T. Cleve, vol. vi. 1894, p. 236).

Fam. 5. ONCÆIDÆ.

ONCÆA MEDITERRANEA (Claus).

1863. *Antaria mediterranea*, Claus, p. 159, pl. xxx. figs. 1-7.

1892. *Oncaea mediterranea*, Giesbrecht, pp. 591, 593, 602, pls. iv. figs. 4-16; xlvii. figs. 8-10, 47.

This was sparingly represented in gatherings from Plymouth Sound, from two and a half miles off the Plymouth Breakwater, and a few other places near Plymouth, collected

during August 1903. Dr. Bourne records having found one specimen at Plymouth in August 1888, and another in April 1889 (vol. i. n. s. p. 151).

ONCÆA MINUTA, Giesbrecht.

1892. *Oncæa minuta*, Giesbrecht, pp. 603, 756, pl. xlvii. figs. 3, 6, 26, 46, 59.

"Plymouth 1899; very rare in January to March, rare in December" (Professor P. T. Cleve, vol. vi. 1894, p. 236).

ONCÆA SUBTILIS, Giesbrecht.

1892. *Oncæa subtilis*, Giesbrecht, pp. 603, 756, pl. xlvii. figs. 14, 18, 25, 43, 60.

"Plymouth, March 1899, very rare" (Professor P. T. Cleve, vol. vi. 1894, p. 236).

ONCÆA VENUSTA, Philippi.

1892. *Oncæa venusta*, Giesbrecht, pp. 590, 592, 602, 755, pls. ii. fig. 5; iii. fig. 7; xlvii. figs. 2, 5, 13, 19, 39, 44, 48, 50, 54, 58.

In tow-net off south coasts of Devon and Cornwall and north coast of the latter county (*Dr. Gough*).

ONCÆA ORNATA, Giesbrecht.

1892. *Oncæa ornata*, Giesbrecht, pp. 591, 604, 755, pls. xlv. figs. 50, 51; xlvii. figs. 20, 24, 49, 53.

In tow-net off coasts of Devon and Cornwall (*Dr. Gough*).

[*Dr. Gough* has taken *Oncæa conifera*, Giesbrecht, off the coasts of Dorsetshire and Hampshire, so that it no doubt will also be found in the area of which this work treats.]

LUBBOCKIA ACULEATA, Giesbrecht.

1891. *Lubbockia aculeata*, Giesbrecht, Atti Accad. Lincei Roma, Rend. (4) vol. vii. 1 sem. pp. 474-481; 1892, Pelag. Copep. von Neapel, pp. 606-611, pl. xlviii. figs. 3, 9, 11, 13, 16, 20.

Off the coasts of Devon, 1903 (*Dr. L. H. Gough*).

LUBBOCKIA SQUILLIMANA, Claus.

1863. *Lubbockia squillimana*, Claus, p. 164, pl. xxv. figs. 1-5.

1892. *Lubbockia squillimana*, Giesbrecht, p. 611, pls. iv. fig. 6; xlviii. figs. 1, 2, 4-8, 10, 12, 14, 15, 17-19, 21.

Off the south coast of Devon, 1903 (*Dr. L. H. Gough*).

Fam. 6. LICHOMOLGIDÆ.

LICHOMOLGUS FUCICOLA (Brady).

1872. *Macrocheiron fucicolum*, Brady, Nat. Hist. Trans. Northumb. & Durham, vol. iv. p. 434, pl. xviii. figs. 9-18.
 1880. *Lichomoligus fucicolus*, Brady, vol. iii. p. 41, pl. lxxxv. figs. 1-11.

Falmouth Harbour 1884, rare. Mouth of the River Yealm 1889, rare. Also very sparingly in gatherings from Plymouth Sound, and off Jenny Cliff Bay, Plymouth; and three miles N.W. of Eddystone Lighthouse in 20-25 fathoms, in August, and at Salcombe in September 1903.

LICHOMOLGUS FORFICULA, Thorell.

1859. *Lichomoligus forficula*, Thorell, Om Krustaceer af Släktet Ascidia, p. 73, pl. xii. & pl. xiii. fig. 19.
 1880. *Lichomoligus forficula*, Brady, vol. iii. p. 50, pls. lxxxv. figs. 12-16; lxxxvi. figs. 14-18.

In the branchial chambers of *Phallusia mamillata*, collected at Plymouth in August 1903.

PSEUDANTHESSIUS GRACILIS, Claus.

1889. *Pseudanthessius gracilis*, Claus, Arbeit. Zool. Wien, vol. viii. p. 344, pl. iv. figs. 1-7.

This species occurred sparingly in gatherings from Salcombe in 1875, and also in September 1903. From Exmouth in June 1884, and near Chequer Buoy, Plymouth, in August 1903.

PSEUDANTHESSIUS FURCILLATUS (Thorell).

1859. *Lichomoligus furcillatus*, Thorell, Om Krustaceer af Släktet Ascidia, p. 74, pl. xiii. fig. 20.
 1880. *Lichomoligus furcillatus*, Brady, vol. iii. p. 49, pl. lxxxviii. figs. 10-14.

Dredged three miles N.W. of Eddystone Lighthouse in 20 to 25 fathoms on August 31st, 1903.

PSEUDANTHESSIUS THORELLI (Brady & Robertson).

1876. *Lichomoligus Thorellii*, Brady & Robertson, Brit. Assoc. Rept. for 1875, p. 197 (not described).
 1880. *Lichomoligus Thorellii*, Brady, vol. iii. p. 47, pl. lxxxviii. figs. 1-9.

Very rare in some material washed from the animals of *Pecten opercularis* at Plymouth, September 2nd, and in a gathering from Salcombe, September 9th, 1903.

HERMANNELLA MAXIMA (I. C. Thompson).

1893. *Lichomolgus maximus*, I. C. Thompson, Trans. Liverpool Biol. Soc. vol. vii. p. 34, pl. xxxv. figs. 1-11.

One or two specimens from *Pecten opercularis* at Plymouth, September 2nd, 1903.

HERMANNELLA ARENICOLA (Brady).

1872. *Boeckia arenicola*, Brady, Nat. Hist. Trans. Northumb. & Durham, vol. iv. p. 430.

1880. *Lichomolgus arenicolus*, Brady, vol. iii. p. 46, pl. lxxxvi. figs. 1-7.

A single specimen, not fully mature, dredged at Salcombe, June 30th, 1875.

HERMANNELLA PARVA, Norman & T. Scott. (Pls. XIII. fig. 15; XV. figs. 4-10; XVI. fig. 12; XIX. fig. 5.)

1905. *Hermannella parva*, Norman & Scott, Ann. & Mag. Nat. Hist. ser. 7, vol. xv. p. 299.

Description of female.—The female specimen represented by the drawing (Pl. XIX. fig. 5) is somewhat like *Hermannella rostrata*, Canu, in general appearance, but is smaller. The length of the specimen is .68 mm. ($\frac{1}{37}$ of an inch).

The antennules (Pl. XV. fig. 7) are short and composed of seven joints; the third and last joints are small, the others are larger, but they vary somewhat in length, as shown approximately by the formula:—

Length of the joints	14	34	8	19	19	14	8
Numbers of the joints	1	2	3	4	5	6	7

The antennæ are short, moderately stout and four-jointed, but the penultimate joint is very small (Pl. XIII. fig. 15). The terminal, curved, claw-like setæ exhibit a pseudo-articulation near the middle, as in some other species of the Lichomolgidæ.

The mandibles consist each of a broad falciform plate, which tapers gradually to the acuminate apex (Pl. XV. fig. 8).

The maxillæ are subcylindrical, simple in structure, and bear each one small marginal and one apical seta (Pl. XV. fig. 8, *m.x.*).

The first maxillipeds, which possess a stout basal part, terminate in a slender curved appendage which is provided with a unilateral row of small spinules, while a moderately

long spiniform seta springs from the inner margin and near the base of the curved terminal appendage (Pl. XV. fig. 9).

The second maxillipeds are moderately stout, two-jointed, and armed with a stout terminal claw; they resemble the second maxillipeds of *Lichomolgus liber*, Brady & Robertson (Pl. XV. fig. 10).

The thoracic feet are somewhat similar to those of *Hermannella rostrata*, Canu, but are scarcely so stout. The fourth pair, which are represented by figure 16, Pl. XII., are of moderate length; both branches are three-jointed and somewhat slender, but the inner branches are rather more slender than the outer. The first two joints of the outer branches have each a small dagger-shaped spine at the distal end of the exterior margin, while the third joint has a similar spine near the middle of the outer edge and one small and one large spine at the apex. Moreover, the second joint bears one, and the third joint five moderately long and plumose setae on the inner margin, arranged as shown in the drawing (Pl. XVI. fig. 12).

The fifth pair are very small; each consists of a single joint which is provided with two small terminal setae (Pl. XIX. fig. 5 a).

The abdomen is moderately slender and composed of four segments; the genital segment is somewhat dilated, and is about equal in length to the next three segments taken together, the second and third are small, but the fourth is rather longer than the one which precedes it.

The furcal joints are about twice as long as the last abdominal segment; each is furnished with several terminal setae, while a single very small seta springs from near the middle of the outer margin. No male was observed.

Habitat. Plymouth Sound, among Hydrozoa, &c. near low-water, August 1903; apparently rare.

Remarks. This small species, of which only a single female specimen was observed, resembles a diminutive *Pseudanthessius gracilis*, but the structure of the fourth pair of thoracic legs shows that its relationship is with Canu's *Hermannella*; it differs, however, from any *Hermannella* hitherto described by the form of the mandibles, the proportional lengths of the abdominal and furcal joints, as well as by other structural details shown by the drawings.

Fam. 7. CLAUSIDIIDÆ.

HERSILIODES LITTORALIS (T. Scott).

1892. (?) *Lichomolgus littoralis*, T. Scott, 10th Rept. Fishery Board for Scotland, pt. iii. p. 260, pl. x. figs. 1-9.

A single specimen of this *Hersiliodes* was obtained in a gathering collected about three miles N.W. of Eddystone Lighthouse on 31st August, 1903.

ANTHESSIUS SOLECURTI, Della Valle.

1880. *Antheissius solecurti*, A. Della Valle, "Sui Coriceidi parassiti del genere *Lichomolgus*," Reale Accad. dei Lincei, Anno cclxxvii. p. 18, pl. ii. figs. 49-55.

The Rev. Canon Norman has examples of this species taken by Mr. Pidgeon on the foot of a specimen of *Solen siliqua* at Paignton, near Torquay, Devonshire, in 1883. This appears to be the first record of *A. solecurti* for the British Islands.

ERGASILUS NANUS, E. van Beneden.

1870. *Ergasilus nanus*, P. J. van Beneden, Les Poissons des côtes de Belgique, leurs parasites et leurs commensaux, p. 27, pl. i. fig. 6 (recorded and figured, but not described).

1901. *Ergasilus nanus*, T. Scott, 19th Ann. Rept. Fishery Board for Scotland, pt. iii. p. 122, pl. vii. figs. 1-8.

A single example was obtained in a gathering from Swanpool Lake, Falmouth, collected July 5th, 1884. This species is usually found as a parasite on the gills of the Grey Mullet, *Mugil chelo*, Cuvier.

Tribe IV. NOTODELPHYOIDA.

Fam. NOTODELPHYIDÆ.

NOTODELPHYS ALLMANI, Thorell.

1859. *Notodelphys Allmani*, Thorell, Om Krustaceer af Slägtet Ascidia, p. 31, pl. i. & pl. ii. fig. 1.

1878. *Notodelphys Allmani*, Brady, vol. i. p. 126, pl. xxv. figs. 1-10.

Starcross, June 1884 and 1889; Salcombe and Plymouth, September 1903, in the branchial chamber of large Ascidians, sometimes moderately frequent.

NOTODELPHYS PRASINA, Thorell.

1859. *Notodelphys prasina*, Thorell, l. c. p. 41, pl. v. fig. 7.

1878. *Notodelphys prasina*, Brady, vol. i. p. 131, pl. xxx. figs. 11-15.

Plymouth, in the branchial chamber of *Phallusia mamillata*
August 1903.

DOROPYGUS PULEX, Thorell.

1859. *Doropygus pulex*, Thorell, l. c. p. 46, pl. vi. fig. 8.

1878. *Doropygus pulex*, Brady, vol. i. p. 133, pl. xxviii. figs. 1-12.

1892. *Doropygus pulex*, Canu, Les Copepodes du Boulonnais, p. 195,
pls. viii. figs. 11-22; ix. figs. 1-3.

Plymouth, in the branchial chamber of *Polycarpa variabilis*,
September 3rd, 1903.

DOROPYGUS AURITUS, Thorell.

1859. *Doropygus auritus*, Thorell, l. c. p. 50, pl. vii.; pl. viii.
fig. 10.

1878. *Doropygus auritus*, Brady, vol. i. p. 135, pl. xxix. figs. 1-11.

Falmouth Harbour, Cornwall, July 1884; apparently rare.

NOTOPTEROPHORUS GIBBER (Thorell).

1864. *Doropygus gibber*, Thorell, l. c. p. 52, pl. viii. fig. 11.

In pharyngeal cavity of *Ciona intestinalis* from Exmouth
Dock*. This species was not observed in Canon Norman's
collections.

NOTOPTEROPHORUS PAPILIO, Hesse.

1864. *Notopterophorus papilio*, Hesse, Ann. Sci. Nat. ser. 5, Zool.
vol. i. p. 338, pl. xi. figs. 1-13.

1878. *Notopterophorus papilio*, Brady, vol. i. p. 142, pl. xxxi.
figs. 3-12.

Plymouth Laboratory, September 19th, 1903. Sometimes
not uncommon in the branchial chamber of large Ascidians.

ASCIDICOLA ROSEA, Thorell.

1859. *Ascidicola rosea*, Thorell, l. c. p. 59, pl. ix. & pl. x. fig. 13.

1878. *Ascidicola rosea*, Brady, vol. i. p. 145, pl. xxx. figs. 1-10.

Starcross, Devon, 1884; Salcombe, September 9th, 1903.

* "The Fauna of the Exe Estuary," by E. J. Allan and R. A. Tod,
Journ. Marine Biol. Assoc. Plymouth, vol. iv. n. s. (No. 3) p. 325
(1902).

ENTEROCOLA FULGENS, P. J. Van Beneden.

1860. *Enterocola fulgens*, P. J. Van Beneden, Bull. Acad. Belg. (2) vol. ix. p. 151, pl. i.
 1892. *Enterocola fulgens*, Canu, Les Copepodes du Boulonnais, p. 216, pls. xviii. figs. 1-12: xix. figs. 12, 13.
 1900. ? *Enterocola fulgens*, T. Scott, 18th Rept. Fishery Board for Scotland, p. 386, pl. xiii. figs. 21-27.

A few specimens were obtained from fragments of *Botryllus* sp., and small Ascidians found in the Kingsbridge estuary.

BOTRYLLOPHILUS RUBER, Hesse.

1864. *Botryllophilus ruber*, Hesse, Ann. Sci. Nat. Zool. ser. 5, vol. i. p. 345, pl. xii. figs. 1-12.
 1901. *Botryllophilus ? ruber*, T. Scott, 19th Rept. Fishery Board for Scotland, p. 242, pl. xvii. figs. 15-27.

Several examples of this curious species were obtained from the same fragments of *Botryllus*, &c. with the *Enterocola* recorded above.

Tribe V. MONSTRILLOIDA.

Fam. MONSTRILLIDÆ.

THAUMALEUS THOMPSONI, Giesbrecht.

1892. *Thaumaleus Thompsoni*, Giesbrecht, pp. 578, 584, 585, pl. xlv. figs. 7, 27, 31, 36, & 40.
 1904. *Thaumaleus Thompsoni*, T. Scott, 22nd Rept. Fishery Board for Scotland, p. 248, pl. xiv. figs. 1-4.

Description of female.—Length about 1 mm. Cephalothorax about equal in length to the abdomen. Forehead broadly rounded. Antennules short, equal to about one-fourth the entire length of cephalothorax and abdomen, three- (or very indistinctly four-) jointed. Abdomen composed of two segments; first segment slightly longer and rather more dilated than the last thoracic segment; second segment about two-thirds the length of the first, and much narrower at the proximal end, but becoming considerably wider posteriorly, as shown in Dr. Giesbrecht's figure 31. Three furcal setæ. Genital filaments reaching to slightly beyond the extremity of the furcal hairs.

The male.—The male is rather smaller than the female, and measures about .83 mm. It has a general resemblance

to the female, but the abdomen consists of three segments; the first is subglobose, about as long as the last segment of the thorax and of somewhat greater width than length; the second is distinctly narrower than the first and scarcely two-thirds the length of it; the third segment is about as long as the first, and is narrowed at the proximal end but becomes wider posteriorly. Furcal setæ three as in the female.

Habitat. Salcombe, 1875. A number of specimens were obtained in gatherings from this place. The above description is prepared from these Salcombe specimens.

THAUMALEUS LONGISPINOSUS (G. C. Bourne).

1890. *Monstrilla longispinosa*, G. C. Bourne, Quart. Journ. Micros. Sci. (n. s.) vol. xxx. p. 575, pl. xxxvii. figs. 1-4, 10.

1892. *Thaumaleus longispinosus*, Giesbrecht, pp. 578, 583, 585, pl. xlv. figs. 1-4, 6, 12, 13, 23, 30, 38, 42.

Dr. Bourne obtained this species at Plymouth. It has not, however, been observed in A. M. N.'s collections, and is included on Dr. Bourne's authority. One of the authors (T. Scott) has recently obtained a single female off the Shetland Isles.

Tribe VI. CALIGOIDA.

The following works and papers are those which will be most frequently referred to in the following notes on the Parasitic Copepoda, in addition to those which have already been given at the commencement of this report on the Copepoda in general (p. 125):—

- 1861. STEENSTRUP & LÜTKEN.—Bidrag til Kundskaben om det aabne Havs Snyltekrebs og Lerneer.
- 1896. BASSETT-SMITH (P. W.).—"List of Parasitic Copepoda of Fish obtained at Plymouth." Journ. Marine Biol. Assoc. of the United Kingdom, vol. iv. pp. 155-163.
- 1896. BASSETT-SMITH (P. W.).—"Notes on Parasitic Copepoda of Fish obtained at Plymouth, with description of New Species." Ann. & Mag. Nat. Hist. ser. 6, vol. xviii. pp. 8-16, pls. iii.-vi.
- 1899. BASSETT-SMITH (P. W.).—"Systematic description of Parasitic Copepoda found on Fishes, with an enumeration of the known Species." Proc. Zool. Soc. pp. 438-507, pl. xxvi.
- 1900. SCOTT (THOMAS).—"Notes on some Crustacean Parasites of Fishes." 18th Report Fishery Board for Scotland, pp. 144-188, pls. v.-viii.
- 1901. SCOTT (THOMAS).—"Notes on some Parasites of Fishes." 19th Report Fishery Board for Scotland, pp. 120-136, pls. vii., viii.

1902. SCOTT (THOMAS).—"Notes on some Parasites of Fishes." 20th Report Fishery Board for Scotland, pp. 288-299, pls. xii., xiii.
1904. SCOTT (THOMAS).—"Some Parasites of Fishes new to the Scottish Marine Fauna." 22nd Report Fishery Board for Scotland, pp. 275-278, pl. xvii.
1905. SCOTT (THOMAS).—"Observations on some Parasites of Fishes new or rare in Scottish Waters." 23rd Report Fishery Board for Scotland, pp. 108-115, pls. v., vi.
1905. WILSON (C. B.).—"North-American Parasitic Copepods belonging to the Family Caligidæ. Pt. I. Caliginæ." Proc. United States Nat. Mus. vol. xxviii. pp. 481-672, pls. v.-xxix.

Fully forty years ago A. M. N. employed Laughrin, the Coastguardsman of Polperro, during several years to collect Parasitic Crustacea for him. Laughrin had been trained by Couch to procure rare fishes, &c. He accompanied Dr. Gwyn Jeffreys and A. M. N. in several of their dredging excursions in the Shetland Seas and elsewhere. Many of the Parasitic Crustacea obtained through Laughrin were then new to Britain. Most of these have since been recorded or described by others; but two or three more are added to the British fauna in the following notes. Wherever the locality Polperro is given it must be understood that the species was obtained through Laughrin.

Fam. I. CALIGIDÆ.

CALIGUS CURTUS (O. F. Müller).

1850. *Caligus Mülleri*, Baird, p. 271, pl. xxxii. fig. 5, ♀.
1850. *Caligus diaphanus*, Baird (*nec* Nordmann), p. 269, pl. xxxii. fig. 1, ♂.
1900. *Caligus curtus*, T. Scott, p. 148, pl. v. figs. 11, 12.
1905. *Caligus curtus*, C. B. Wilson, p. 578, pl. x. figs. 112-124, and figs. in text 8, 24, 28.

On many species and genera of fishes; common.

CALIGUS MINIMUS, Otto.

1828. *Caligus minimus*, Otto, Nov. Act. Acad. Cæs. Leop. vol. xiv. p. 354, pl. xxii. figs. 7, 8.
1840. *Caligus minutus*, H. Milne-Edwards, Hist. Nat. des Crust. vol. iii. p. 450, and Règ. Anim. Cuvier, Crust. pl. lxxvii. fig. 2.
1865. *Caligus minutus*, Heller, Reise Frigate 'Novara,' p. 163, pl. xiv. fig. 1.
1901. *Caligus minutus*, A. Scott, Trans. Liverpool Biol. Soc. vol. xv. p. 349, pl. i. figs. 1-8.

Gill-cavity and mouth of the Bass (*Lalrax lupus*) at Plymouth (Bassett-Smith).

CALIGUS CENTRODONTI, Baird.

1850. *Caligus centrodonti*, Baird, p. 272, pl. xxxii. figs. 6, 7.

1905. *Caligus centrodonti*, Wilson, p. 652, pl. xxvii. figs. 333-344.

On the Sea-Bream, *Pagellus centrodontus*, at Polperro (A. M. N.).

CALIGUS RAPAX, H. Milne-Edwards.

1850. *Caligus rapax*, Baird, p. 270, pl. xxxii. figs. 2, 3.

1861. *Caligus rapax*, Steenstrup & Lütken, p. 359, pl. ii. fig. 4.

1900. *Caligus rapax*, T. Scott, p. 148, pl. v. figs. 13-19.

1905. *Caligus rapax*, Wilson, p. 568, pl. vii. figs. 79-89.

Starcross, Plymouth, and Falmouth (A. M. N.).

CALIGUS PELAMYDIS, Kröyer.

1863. *Caligus pelamydis*, Kröyer, p. 50, pl. iv. fig. 4, *a-g*.

1896. *Caligus scomberi*, Bassett-Smith, p. 11, pl. iii. fig. 2.

1901. *Caligus scomberi*, T. Scott, p. 124, pl. vii. figs. 9, 10.

1905. *Caligus pelamydis*, Wilson, p. 594, pl. xiii. figs. 154-161 ;
pl. xiv. fig. 161 *a*.

On the inner surface of the operculum of the Mackerel, *Scomber scombrus*, at Plymouth (Bassett-Smith).

CALIGUS GURNARDI, Kröyer.

1863. *Caligus gurnardi*, Kröyer, "Bidrag til Kundskab om Snylterkrebse," Naturhist. Tidssk. ser. 3, vol. ii. p. 150, pl. ii. fig. 3, *a-g*.

1895. *Caligus gurnardi*, Bassett-Smith, p. 157.

In the gill-cavity of *Trigla cuculus* at Plymouth (Bassett-Smith) ; Falmouth, 1884 (A. M. N.).

CALIGUS DIAPHANUS, Nordmann.

1832. *Caligus diaphanus*, Nordmann, Mikrograph. Beiträge, pt. ii. p. 26.

1863. *Caligus diaphanus*, Kröyer, Naturhist. Tidssk. ser. 3, vol. ii. p. 153, pl. vii. fig. 5, *a-e*.

1900. *Caligus diaphanus*, T. Scott, p. 149, pl. v. figs. 20-25.

This is not *Caligus diaphanus*, Baird = *C. curtus*, Müller, ♂.

Found in quantity on the inner surface of the operculum of *Trigla hirundo* and *Trigla cuculus* at Plymouth (Bassett-Smith).

CALIGUS ZEI, n. sp. (Pl. XXII. figs. 1-8.)

The cephalosome has the length and breadth subequal, the sides only slightly arched ; the cephalic area somewhat larger than the metosomatic, the lateral areas bend inwards posteriorly ; the frontal plates with their lunules are of

moderate size. The free segment of the metasome is longer than usual, the length equalling the breadth. The urosome in the female is composed of two joints; the first (or genital) segment is subquadrate and large, as broad as three-fourths of the cephalosome, and its breadth and length subequal; the second segment is oblong, about one-third of the length of the genital segments; the uropodal rami are small.

The antennules are of unusual length, the second joint being more than five times as long as broad, and much longer than the first joint; it bears a single spine on the posterior margin. The antennæ are sharply hook-formed. The first maxillipeds have the second joint long, and the longer of the two nails equal to half that joint in length. The second maxillipeds (fig. 5) are of moderate size. The furca (fig. 6) encloses with its nearly straight arms an arch which is narrowly rounded above. The fourth feet (fig. 8) are three-jointed, the two distal joints equalling the length of the basal, the second joint bears a well-developed spine at its termination; the third joint has one lateral and the usual three terminal spines, of which the middle spine is the longest. Length 5.5 millim.

The male has the urosome (fig. 7) three-jointed, the first narrow, oblong; the combined length of the last two joints is about equal to that of the first.

The chief characteristics of this species are the length of the second joint of the antennules, and the structure of the fourth feet, in which the middle terminal spine being the longest, is, as far as we know, a unique feature.

Taken forty years ago on *Zeus faber* (John Doree) at Polperro, by Laughrin, and sent by him to A. M. N.

SCIENOPHILUS TENUIS, P. J. van Beneden.

1852. *Scienophilus tenuis*, P. J. van Beneden, Bull. Acad. Roy. de Belgique, vol. xix. p. 464, and plate.

Four specimens taken by Bassett-Smith at Plymouth on the inside of the operculum of *Sciæna umbra*.

PSEUDOCALIGUS BREVIPES (Bassett-Smith).

1896. *Caligus brevipedis*, Bassett-Smith, p. 11, pl. iii. fig. 1.

1901. *Pseudocaligus brevipedis*, A. Scott, "Some additions to the Fauna of Liverpool Bay," Trans. Liverpool Biol. Soc. vol. xv. p. 350, pl. ii. figs. 1-6.

Plymouth, from the gill-cavity of *Motella tricirrata* (Bassett-Smith).

LEPEOPHTHEIRUS HIPPOGLOSSI (Kröyer).

1850. *Lepeophtheirus hippoglossi*, Baird, p. 276, pl. xxxii. fig. 12, ♀.

1850. *Lepeophtheirus obscurus*, Baird, p. 277, pl. xxxii. fig. 11, ♂.

1900. *Lepeophtheirus hippoglossi*, T. Scott, p. 151, pl. v. figs. 33-42; pl. vi. figs. 1, 2, ♂ ♀.

1905. *Lepeophtheirus hippoglossi*, Wilson, p. 625, pl. xx. figs. 234-243, and fig. 6 in text, ♂ ♀.

On the Holibut, Polperro (A. M. N.).

[*Lepeophtheirus obscurus*, Bassett-Smith. Mr. Bassett-Smith (Jour. Marine Biol. Assoc. vol. iv. 1896, p. 157) records a species from the Brill (*Rhombus laevis*) taken at Plymouth, and refers it with doubt to *Lepeophtheirus obscurus*, Baird, which was obtained from the same species of fish. Subsequently Bassett-Smith figures what he then styles *Caligus obscurus*, Baird (Ann. & Mag. Nat. Hist. ser. 6, vol. xviii. pl. iv. fig. 2), and not only is his parasite there referred to the genus *Caligus*, but the figures show the presence of sucking-disks. Whether the form he found was a *Lepeophtheirus* or a *Caligus*, it was certainly not *Lepeophtheirus obscurus* of Baird. In Bassett-Smith's third paper (Proc. Zool. Soc. 1899, p. 456) he referred it back again to the genus *Lepeophtheirus*. It is just possible, if the species he found was a *Lepeophtheirus*, that it may have been the female of *L. appendiculatus*, Kröyer, male (Naturhist. Tidssk. ser. 3, 1863, p. 207, pl. vi. fig. 4, a-i), which has a branched funiculus, but the former was taken on the Brill, while the latter was found on *Raia clavata*.]

LEPEOPHTHEIRUS NORDMANNI (H. Milne-Edwards).

1850. *Lepeophtheirus Nordmanni*, Baird, p. 275, pl. xxxii. fig. 1.

1900. *Lepeophtheirus Nordmanni*, T. Scott, p. 151, pl. v. figs. 32-37.

1905. *Lepeophtheirus Nordmanni*, Wilson, p. 623, pl. xix. figs. 223-233.

On *Orthogoriscus mola*, the Short Sunfish, Polperro (A. M. N.); Plymouth (Spence Bate, in Mus. Nor.).

LEPEOPHTHEIRUS PECTORALIS (O. F. Müller).

1850. *Lepeophtheirus pectoralis*, Baird, p. 275, pl. xxxii. fig. 10.

1900. *Lepeophtheirus pectoralis*, T. Scott, p. 150, pl. v. figs. 26-31.

On the Dab (*Pleuronectes limanda*) and the Flounder (*P. flesus*) near Starcross (C. Parker, 1884, in Mus. Nor.); on Plaice, Flounder, and Dab at Plymouth (Bassett-Smith).

LEPEOPHTHEIRUS SALMONIS (Kröyer).

1837. *Caligus salmonis*, Kröyer, Naturhist. Tidssk. vol. i. pl. vi. fig. 7 *a-c*, vol. ii. 1838, pp. 13, 18; ser. 3, vol. ii. 1863, *Lepeophtheirus salmonis*, p. 211, pl. xvii. fig. 1 *a-b*.
 1847. *Caligus Strömii*, Baird, Trans. Berwick Nat. Club; 1850, Brit. Entom. p. 274, pl. xxxii. figs. 8, 9.
 1900. *Lepeophtheirus Stromii*, T. Scott, p. 152, pl. vi. figs. 3-8.
 1905. *Lepeophtheirus salmonis*, Wilson, p. 640, pl. xxiv. figs. 294-300.

On Salmon off Polperro (*A. M. N.*); on Salmon and Salmon Trout, in June and July, at Plymouth (*Bassett-Smith*).

LEPEOPHTHEIRUS POLLACHII, Bassett-Smith.

1896. *Lepeophtheirus pollachii*, Bassett-Smith, p. 12, pl. iv. fig. 1.
 1900. *Lepeophtheirus pollachii*, T. Scott, p. 153, pl. vi. figs. 9-15.
 1905. *Lepeophtheirus innominatus*, Wilson, p. 656, pl. xxviii. figs. 345-352.

Plymouth, from *Gadus pollachius* (Biol. Lab.); Polperro, from *Gadus carbonarius*, and Falmouth (*A. M. N.*); on Salmon at Polperro (*Laughrin*, in *Mus. Nor.*).

LEPEOPHTHEIRUS THOMPSONI, Baird.

1850. *Lepeophtheirus Thompsoni*, Baird, p. 278, pl. xxxiii. fig. 2.
 1851. *Caligus gracilis*, P. J. van Beneden, Ann. des Sci. Nat. ser. 3, vol. xvi. p. 90, pl. ii. figs. 1-7.
 1861. *Caligus branchialis* (Malm MSS.), Steenstrup & Lütken, p. 362, pl. ii. fig. 3.
 1863. *Lepeophtheirus rhombi*, Kröyer, Naturhist. Tidssk. ser. 3, vol. ii. p. 192, pl. v. fig. 5.
 1900. *Lepeophtheirus Thompsoni*, T. Scott, p. 152, pl. v. figs. 43-45.
 1905. *Lepeophtheirus Thompsoni*, Wilson, p. 619, pl. xviii. figs. 212-219.

On Turbot (*Rhombus maximus*) at Polperro (*A. M. N.*), and Plymouth (*Bassett-Smith*).

TREBIUS CAUDATUS, Kröyer.

1850. *Trebius caudatus*, Baird, p. 280, pl. xxxiii. figs. 3, 4.
 1900. *Trebius caudatus*, T. Scott, p. 155, pl. vi. figs. 20-26.

Common on Skate. Polperro, 1859 (*A. M. N.*); Plymouth (*Bassett-Smith*).

ELYTROPHORA BRACHYPTERA, Gerstäcker.

1853. *Elytrophora brachyptera*, Gerstäcker, "Ein neue und ein weniger gekannte Siphonostomen-Gattung," Archiv f. Naturgesch. p. 62, pl. iii. figs. 1-14.
 1863. *Arnæus thynni*, Kröyer, Naturhist. Tidssk. ser. 3, vol. ii. pl. 231, pl. viii. fig. 5 *a-g*.

1865. *Elytrophora brachyptera*, Heller, Reise 'Novara,' Crustaceen, p. 189, pl. xvii.

1896. *Elytrophora brachyptera*, Bassett-Smith, p. 12, pl. iv. fig. 3.

Ten specimens from a large Tunny (*Thynnus thynnus*) taken outside Plymouth (*Bassett-Smith*).

LÜTKENIA ASTERODERMI, Claus. (Pl. XXII. figs. 9, 10 ; Pl. XXIV. figs. 1-8.)

1864. *Lütkenia asterodermi*, Claus, "Beitr. z. Kennt. der Schmarotzkrebse," Zeit. f. wiss. Zool. vol. xiv. p. 369, pl. xxxiv. figs. 10-15.

1867. *Cecropsina glabra*, Heller, Reise 'Novara,' Crustaceen, p. 209, pl. xix. figs. 1, 2.

Cephalosome nearly round, deeply hollowed out posteriorly between the lateral areas and the metasomatic central portion ; lateral areas rounded distally. The last segment of the metasome produced into leaf-like dorsal expansions, well rounded posteriorly and separated from each other dorsally through part of their length. First (genital) segment of the urosome greatly produced backwards into two elongated lobes, which completely overhang and hide the second segment of the urosome and its uropodal plates, which latter can only be seen from the ventral aspect. Seen from below (fig. 8) the second segment of the urosome is much broader than long and somewhat lozenge-shaped ; it bears two uropodal plates which are broadly ovate, with a few small spinules at their extremity. The antennules (fig. 1) are very small ; the second joint slender, subequal to the first in length. The antennæ (fig. 2) are sickle-shaped, usually with one or two nodulous processes on the inner side. The first maxillipeds (fig. 3) terminate in three claws—a pair of equal length and a central longer claw. The second maxillipeds (Pl. XXII. fig. 10) are of immense size, terminating in a powerful, gradually attenuated, strong, well-curved claw, which is acute at the extremity. The first feet (fig. 7) are very small, but two branched ; inner branch minute, simple, not half the length of the first joint of the outer branch ; outer branch two-jointed, first joint with only a single distal spine ; second joint obliquely truncate at the extremity, where there are three or four little spines. Second and third feet two-branched, and their branches two-jointed ; their structure will be best understood by examination of the drawings (figs. 5 and 6). The fourth feet (fig. 7) have also two branches, but the branches consist of only a single joint, and the inner branch is very minute.

Three specimens were sent to A. M. N. by Laughrin about 1862, which had been obtained by him from *Lavarus imperialis*

(= *Ausonia Curieri*) taken off Polperro; and this, we believe, was the first specimen of that very rare fish which had been taken in our seas.

DINEMOURA PRODUCTA (O. F. Müller).

1850. *Dinemoura lamnæ*, Baird, p. 286, pl. xxxiii. fig. 7.

1857. *Dinemoura elongata*, P. J. van Beneden, Bull. Acad. Roy. de Belgique, ser. 2, vol. xxiv. p. 225 and Plate.

1861. *Dinematura producta*, Steenstrup & Lütken, p. 34, pl. vii. fig. 13.

1900. *Dinematura producta*, T. Scott, p. 156, pl. vi. figs. 27-31.

On the tail of the Porbeagle Shark (*Lamna cornubica*) at Polperro (A. M. N.).

CECROPS LATREILLII, Leach.

1850. *Cecrops Latreillii*, Baird, p. 293, pl. xxxiv. figs. 1, 2.

On the Short Sunfish (*Orthogoriscus mola*) taken off Polperro (A. M. N.); off Plymouth (*Bassett-Smith*); Falmouth (*Cocks*).

ORTHAGORISCOLA MURICATUS (Kröyer).

1850. *Læmargus muricatus*, Baird, p. 295, pl. xxxiv. figs. 3, 4.

1860. *Læmargus muricatus*, P. J. van Beneden, Recher. sur les Crustacés du littoral de Belgique, p. 149, pl. xix. figs. 1-4.

1900. *Læmargus muricatus*, T. Scott, p. 158, pl. vi. figs. 39-42.

1902. *Orthagoriscola muricatus*, Poche (Franz), Zool. Anzeiger, vol. xxvi. p. 15.

Specimens taken off Plymouth were given to A. M. N. a great many years ago by the late Mr. C. Spence Bate.

PANDARUS BICOLOR, Leach.

1850. *Pandarus bicolor*, Baird, p. 218, pl. xxxiii. fig. 10, and *Pandarus Boscii*, p. 289.

1854. *Nogagus angustulus* (*angustatus* in description of plate), Gerstäcker, "Beschreibung zweier neuer Siphonostomen-Gattungen," Archiv f. Naturgesch. xx. Jahrg. p. 193, pl. vii. figs. 17, 18, ♂.

1900. *Pandarus bicolor*, T. Scott, p. 157, pl. vi. figs. 33-38, ♂ & ♀.

Dr. T. Scott has recently figured what he regards as the male of *Pandarus bicolor*, and that male is identical with the *Nogagus angustulus* of Gerstäcker. Found on the Picked Dogfish (*Acanthias vulgaris*) together with the pale variety *P. bosci*, Leach, at Polperro; also procured at Plymouth in 1889 (A. M. N.). From the skin of the Spotted Dogfish (*Scyllium catulus*) at Plymouth (*Bassett-Smith*); Falmouth (*Cocks*).

PHYLLOTHYREUS CORNUTUS (H. Milne-Edwards). (Pl. XXIV. figs. 9-17.)

1840. *Phyllophora cornuta*, H. Milne-Edwards, Hist. Nat. Crust. p. 471, pl. xxxviii. fig. 13, 14.

1903. *Phyllothyreus cornutus*, Norman, Ann. & Mag. Nat. Hist. ser. 7, vol. xi. p. 368 (April, 1903).

More than forty years ago Wm. Laughrin, who was engaged in collecting fish parasites at Polperro, Cornwall, for A. M. N., sent him two specimens of this most interesting species. They were found on the Blue Shark (*Carcharias glaucus*). The only other previously known habitat of the species was, according to Milne-Edwards, Tongatabu in the Friendly Islands, whence the type specimens came; this is, therefore, a remarkable instance of wide distribution. The name *Phyllophora* having been previously employed, *Phyllothyreus* (l. c.) has recently been substituted for it.

The cephalosome is devoid of any metasomatic region, since all the feet are attached to separate segments; it is semioval in form, deeply emarginate behind, and the lateral areas widely rounded distally. No separated frontal plates. Three segments of the metasome bear dorsally large leaf-like processes, which laterally extend far beyond the margins of the cephalosome. The urosome is composed of two segments; the first of these (*i. e.* the genital) is nearly round, and bears at the corners of the truncated hinder margin ovate processes which represent the fifth feet; the last segment consists of two transversely obovate leaf-like plates from between which the very long egg-sacs are protruded.

The antennules (fig. 10) are small; the second segment, which bears the single spine, which is characteristic of the hinder margin in the Caligoida, is much shorter than the first joint. The antennules (fig. 11) are enormously developed, and protrude forwards far in advance of the cephalosome, forming very powerful grasping organs. The first maxillipeds (fig. 12) have the nails short and strong, with a little spine-like process by the origin of the larger one. The second maxillipeds (fig. 13) are very short, but at the same time strong; the palm is directly transverse, and the short nail is strong. The first four pairs of feet are biramose, the rami all leaf-like, so that the animal viewed from below has the peculiar appearance which is well represented in Milne-Edwards's pl. xxxviii. fig. 14; the first pair have the inner ramus two-jointed and the outer a single joint; the second pair have both rami two-jointed; while in the third and fourth pair the rami consist of only a single joint; these feet are entirely devoid of setæ, bearing only a few small spines, with the margin also in places very minutely ciliated. Length 13 millim.

Genus ? ECHTHROGALEUS, Steenstrup & Lütken, ♂.

Male. General form that of a *Caligus*, but the penultimate segment of the metasome completely separated from the cephalosome. No lunules or frontal sucking-discs. All first four pairs of feet two-branched; both branches of first pair two-jointed; inner branch of three following pairs two-jointed, and outer branch three-jointed; all branches of the feet setose.

This Crustacean is near to *Nogagus*, but in the type species of that genus, *Nogagus Latreilli*, Leach, both branches of all the two-branched feet consist of two joints (*vide* Steenstrup & Lütken, pl. ix. fig. 18).

Heller (Reise 'Novara,' Crustaceen, p. 197, pl. xx. fig. 3) describes a parasite from New Zealand which he considers to be the male of *Echthrogaleus braccatus* (Dana), in company with which it was found. The species described below is undoubtedly congeneric with the male described by Heller. We have only one British *Echthrogaleus*, is this then its male? The future must decide. It has not yet, so far as we know, been found in company with *Echthrogaleus coleoptratus*, nor even infesting the same species of fish.

ECHTHROGALEUS LÜTKENI (Norman). (Pl. XXII. figs. 1-9.)

1869. *Nogagus Lütkeni*, Norman, "Last Report Dredging Shetland," Brit. Assoc. Rept. for 1868, p. 300.

The cephalosome is much rounded, its breadth much greater than the length; the hinder corners of the lateral areae incurved, well rounded, and reaching backwards to the end of the first of the two exposed segments of the metasome. First segment of metasome with lateral expansions broader and longer than in the following short segment. The urosome consists of three segments; the first, or genital segment, is subquadrate with slightly arched sides, longer than broad; the second segment very short, the terminal rather broader than long; the uropodal laminae are as long as the two preceding joints, and of ovate form.

The antennules (fig. 2) have the first joint much longer than the second; the second joint has one spine on the hinder margin. The antennae (fig. 3) have the penultimate joint stout, the last long and gradually attenuated, only very slightly curved, bearing a single seta on the inner face. The first maxillipeds (fig. 4) have the claws setose. The second maxillipeds have the terminal joint very broad and stout, obliquely truncate distally, with a nodule, and areolated disk

at the commencement of the palm; the finger short and stout. The first feet (fig. 6) have both rami composed of two joints; the inner branch terminates in three setæ, the outer in four; the first joint of this outer branch has one spine on the outer margin, and the second joint three. The second, third, and fourth feet (figs. 7, 8, 9) are alike in general character, though differing slightly in the number of setæ and external marginal spines. The fifth feet, which are situated under the genital segment, are minute, one-jointed, bearing two or three short setæ.

Polperro, two specimens, but the record of the fish on which they were found was not given. The type specimen was taken on a Skate at Shetland.

ECHTHROGALEUS COLEOPTRATUS, Guérin.

1817. *Dinematura coleoptrata*, Guérin, Icon. du Règne Animal, vol. iii. Crustacés, pl. xxxv. fig. 6.

1850. *Dinemoura alata* (Johnston), Baird, p. 285, pl. xxxiii. figs. 6, 7.

1861. *Echthrogaleus coleoptratus*, Steenstrup & Lütken, p. 380, pl. viii. fig. 15.

1900. *Echthrogaleus coleoptratus*, T. Scott, p. 156, pl. vi. fig. 52.

From the Blue Shark (*Carcharias glaucus*) and the Porbeagle (*Lamna cornubica*) at Polperro (A. M. N.).

Fam. 2. DICHELESTIIDÆ.

LERNANTHROPUS KRÖYERI, P. J. van Beneden.

1851. *Lernanthropus Krøyeri*, P. J. van Beneden, "Recherches sur quelques Crustacés inférieurs," Ann. des Sci. Nat. ser. 3, vol. xvi. p. 102, pl. iii. figs. 7-9.

1858. *Lernanthropus Krøyeri*, Claus, Bau und Entwick. parasitisch. Crustaceen, p. 18, figs. 15-19.

1864. *Lernanthropus Krøyeri*, Nordmann, "Neue Beitr. z. Kennt. parasit. Copepoden," Bull. Soc. Imp. Moscou, vol. xxxvii. p. 508, pl. vii. figs. 5-8.

1879. *Lernanthropus Krøyeri*, Heider, "Die Gattung Lernanthropus," Arbeit. Zoolog. Institut, Wien, vol. ii. p. 90, pl. v. figs. 72-73.

1895. *Lernanthropus Krøyeri*, Bassett-Smith, Jour. Marine Biol. Assoc. vol. iv. p. 159.

1903. *Lernanthropus Krøyeri*, A. Scott, Report Lancashire Sea-Fisheries Laboratory, no. xii. p. 43.

Twelve specimens from a *Labrax lupus* taken off Plymouth (*Bassett-Smith*).

ANTHOSOMA CRASSUM (Abildgaard).

1794. *Caligus crassus*, Abildgaard, Scrivter Naturhist. Selskab. vol. iii. p. 54, pl. v. figs. 1-3.

1816. *Caligus imbricatus*, Risso, Hist. Nat. Crust. Nice, p. 162, pl. iii. fig. 13.
 1838. *Anthosoma Smithii* (Leach), Kröyer, Naturhist. Tidssk. vol. i. p. 295, pl. ii. figs. 2, 2 a.
 1840. *Anthosoma Smithii*, H. M.-Edwards, Hist. Nat. des Crust. vol. iii. p. 483, pl. xxxix. fig. 5; and Cuv. Règne Anim., Crust. pl. lxxix. fig. 3.
 1850. *Anthosoma Smithii*, Baird, p. 299, pl. xxxiii. fig. 10.
 1861. *Anthosoma crassum*, Steenstrup & Lütken, p. 57, pl. xii. fig. 24.
 1905. *Anthosoma crassum*, T. Scott, p. 112, pl. v. figs. 15 & 16 (♀).

Leach's British specimen was "discovered sticking to a Shark (the *Lamna cornubica*) thrown ashore at Exmouth, Devonshire, by T. Smith, Esq., of the Temple, who sent it to Dr. Leach, British Museum" (*Baird*).

DICHELESTIUM OBLONGUM (Abildgaard).

1794. *Caligus oblongus*, Abildgaard, Scrivter Naturhist. Selskab. vol. iii. p. 54, pl. v. figs. 4-11.
 1804. *Dichelestium sturionis*, Herman, Mémoire Aptérologique, p. 125, pl. v. figs. 7, 8.
 1838. *Dichelestium sturionis*, Kröyer, Naturhist. Tidssk. vol. i. p. 299, pl. ii. figs. 5, 5 a.
 1839. *Dichelestium sturionis*, H. Rathke, "Bau des *Dichelestium sturionis* und der *Lernæopoda stellata*," Nov. Act. Acad. Leop.-Car. Nat. Cur. vol. xix. p. 127, pl. xvii. figs. 1-17.
 1840. *Dichelestium sturionis*, H. Milne-Edwards, Hist. Nat. des Crust. vol. iii. p. 485, pl. xxxix. fig. 4.
 1905. *Dichelestium sturionis*, T. Scott, p. 111, pl. v. figs. 17-24; pl. vi. figs. 1-6 (♂ & ♀).

Numerous examples found on a Sturgeon, which was taken at Polperro in 1867 (*A. M. N.*).

CLAVELLA MULLI, P. J. van Beneden.

1851. *Clavella mulli*, P. J. van Beneden, "Rech. sur quelques Crust. inférieurs," Ann. des Sci. Nat. ser. 3, vol. xvi. p. 99, pl. iii. figs. 3, 4.
 1896. *Clavella mulla*, Bassett-Smith, vol. iv. p. 159.

Numerous specimens taken from the gills of Red Mullet at Plymouth (*Bassett-Smith*).

CONGERICOLA PALLIDA, P. J. van Beneden.

1854. *Congericola pallida*, P. J. van Beneden, Bull. Acad. Roy. de Belgique, vol. xxi. p. 583, figs. 1-6.
 1896. *Cycnus pallidus*, Bassett-Smith, p. 159.
 1904. *Cycnus pallidus*, T. Scott, p. 127.

A few specimens taken from Conger Eels at Plymouth by Bassett-Smith.

Tribe VII. LERNÆOIDA.

Fam. 1. LERNÆIDÆ.

LERNÆA BRANCHIALIS, Linné.

Plymouth, common on the gills of Cod, Haddock, Bass, and Whiting (*Bassett-Smith*); Polperro and Falmouth (*A. M. N.*).

LERNÆA LUSCI, Bassett-Smith.

1896. *Lernæa lусi*, Bassett-Smith, Marine Biol. Soc. Jour. p. 160; and Ann. & Mag. Nat. Hist. (1. c.) p. 13, pl. iv. fig. 6.
1904. *Lernæa lусi*, T. Scott, p. 277, pl. xvii. figs. 12 & 13.

Very common on the gills of the Whiting-pout (*Gadus fuscus*) at Plymouth (*Bassett-Smith*); also at Polperro (*A. M. N.*).

PENNELLA FILOSA (Linné).

1870. *Pennella orthagorisci*, E. P. Wright, Ann. & Mag. Nat. Hist. ser. 4, vol. v. p. 42, pl. i. figs. 1-6.

Mr. Bassett-Smith writes: "One specimen was obtained from the Plymouth Laboratory, but from what fish was not known." In E. P. Wright's paper above referred to he writes: "Dr. Baird informs me that he examined a specimen of *Pennella* from a Sunfish captured at Megavissey, Cornwall, which he refers to *P. filosa*, Linn." About the year 1862, Thomas Edward of Banff sent to A. M. N. a *Pennella* which he had found on a Sunfish taken in the Moray Firth. The head was absent, but the specimen was probably referable to *P. filosa*, Linné. Mr. Bassett-Smith called his specimen "*Penella sagitta*? Linn."

LERNÆENICUS SPRATTA (Sowerby).

1850. *Lernæonema spratta*, Baird, p. 341, pl. xxxv. fig. 10.
1850. *Lernæonema Bairdi*, Salter, Ann. & Mag. Nat. Hist. ser. 2, vol. vi. p. 86, pl. vii. fig. 1.
1865. *Lernæonema monillaris*, Heller, Reise 'Novara,' Crust. p. 248, pl. xxv. fig. 4.
1900. *Lernæenicus sprattæ*, T. Scott, p. 161, pl. vii. figs. 7-10.

One very perfect specimen taken at Plymouth (*Bassett-Smith*).

LERNÆENICUS ENCRASICOLI (Turton).

1850. *Lernæonema encrasicoli*, Baird, p. 341, pl. xxxv. fig. 11.

"A broken specimen, probably belonging to this species, was taken from a *Clupea alosa*" at Plymouth (*Bassett-Smith*); on the eye of a young Pollack at Falmouth (*Cocks*).

Fam. 2. SPLANCHNOTROPHIDÆ.

SPLANCHNOTROPHUS GRACILIS, Hancock & Norman.

1863. *Splanchnotrophus gracilis*, Hancock & Norman, "On *Splanchnotrophus*, an undescribed genus of Crustacea, parasitic in Nudi-branchiate Mollusca," Trans. Linn. Soc. vol. xxiv. p. 50, pl. xv.; and pl. xvi. figs. 7-10.

The type specimens were found buried in the flesh of the Nudibranch *Acanthodoris pilosa*, Müller, taken on the south coast of Devonshire.

Fam. 3. CHONDRACANTHIDÆ.

CHONDRACANTHUS ZEI, De la Roche.

1850. *Chondracanthus zei*, Baird, p. 327, pl. xxxv. fig. 1.

1900. *Chondracanthus zei*, T. Scott, p. 167, pl. viii. fig. 1.

Polperro (*Mus. Nor.*); very common on gills of *Zeus faber* at Plymouth (*Bassett-Smith*).

CHONDRACANTHUS LOPHII, Johnston.

1850. *Chondracanthus lophii*, Baird, p. 330, pl. xxxv. fig. 3.

1879. *Chondracanthus gibbosus*, C. Vogt, Crustacés Parasites des Poissons, p. 76, pl. v. figs. 1-4; pl. vi. figs. 1-3, ♂ ♀.

On the Angler, Starcross (*C. Parker*) and Polperro (*Laughrin*); both in *Mus. Nor.* Plymouth (*A. M. N.* 1889); Falmouth (*W. P. Cocks*).

CHONDRACANTHUS MERLUCCII (Holten).

1837. *Chondracanthus merluccii*, Kröyer, Naturhist. Tidssk. vol. i. p. 278, pl. iii. figs. 9 a-d.

Common in the mouth of the Hake, *Gadus merluccius*. Starcross and Polperro (*C. Parker* and *Laughrin* in *Mus. Nor.*). Plymouth (*Bassett-Smith*).

CHONDRACANTHUS SOLEÆ, Kröyer.

1838. *Chondracanthus soleæ*, Kröyer, Naturhist. Tidssk. vol. ii. p. 139, pl. iii. fig. 4.

1900. *Chondracanthus soleæ*, T. Scott, p. 165, pl. vii. figs. 41-45.

On the Dab near Starcross (*C. Parker* in *Mus. Nor.*). Gill-cavity of *Solea vulgaris* at Plymouth (*Bassett-Smith*).

CHONDRACANTHUS CORNUTUS (O. F. Müller).

1850. *Lernentoma cornuta*, Baird, p. 328, pl. xxxv. fig. 2.

1851. *Chondracanthus cornutus*, P. J. van Beneden, Ann. des Sci. Nat. ser. 3, vol. xvi. p. 108, pl. iv. figs. 1-4.

1879. *Chondracanthus cornutus*, C. Vogt, Crustacés Parasites des Poissons, p. 78, pl. vi. figs. 4 8, ♂ ♀.

1900. *Chondracanthus cornutus*, T. Scott, p. 164, pl. vii. figs. 19-31, ♂ ♀.

This is *Lernentoma cornuta*, Baird. "A great number of specimens were taken from the gills of the Plaice (*P. platessa*), Flounder (*P. flesus*) and *P. megastoma*. They differed much in size, being small and especially abundant on the Flounder" (*Bassett-Smith*).

CHONDRACANTHUS CLAVATUS, Bassett-Smith.

1896. *Chondracanthus clavatus*, Bassett-Smith, p. 13, pl. v. figs. 1-1 a-o.

1900. *Chondracanthus clavatus*, T. Scott, p. 165, pl. vii. figs. 35-37.

On the gills of the Lemon Sole, *Pleuronectes microcephalus*, at Plymouth (*Bassett-Smith*).

ORALION ASELLINUS (Linné).

1832. *Chondracanthus triglæ* (Blainville), Nordmann, Mikrogr. Beiträge, vol. ii. p. 116, pl. ix. fig. 1.

1850. *Lernentoma asellina*, Baird, p. 329, pl. xxxv. fig. 4.

1896. *Chondracanthus triglæ*, Bassett-Smith, p. 13, pl. iv. fig. 4.

1899. *Oralion asellinus*, Bassett-Smith, p. 490, pl. xxvi. figs. 1, 1 a-c.

1900. *Oralion asellinus*, T. Scott, p. 163, pl. vii. figs. 16-18.

Polperro (A. M. N.). Taken plentifully from *Trigla gurnardus*, *T. cuculus*, and *T. hirundo* at Plymouth (*Bassett-Smith*); Falmouth (W. P. Cocks).

Fam. 4. LERNÆOPODIDÆ.

LERNÆOPODA SALMONEA (Linné).

1840. *Basanistes salmonea*, H. Milne-Edwards, Hist. Nat. des Crust. vol. iii. p. 509, pl. xli. fig. 3.

1850. *Lernæopoda salmonea*, Baird, p. 335, pl. xxxv. fig. 6.

1863. *Lernæopoda salmonea*, Krøyer, Naturhist. Tidssk. ser. 3, vol. ii. p. 275, pl. xv. fig. 3.

1900. *Lernæopoda salmonea*, T. Scott, p. 173, pl. viii. fig. 26.

One female taken on the gills of a Salmon at Plymouth (*Bassett-Smith*).

LERNÆOPODA GALEI, Krøyer.

1850. *Lernæopoda galei*, Baird, p. 334, pl. xxxv. fig. 7.

1900. *Lernæopoda galei*, T. Scott, p. 172, pl. viii. figs. 16-25, ♂ ♀.

From *Galeus vulgaris* (the Toper) and from Cod, Polperro (A. M. N.); and from *Galeus vulgaris*, *Mustelus vulgaris*, and *Acanthias vulgaris* at Plymouth (*Bassett-Smith*).

LERNÆOPODA ELONGATA (Grant).

1850. *Lernæopoda elongata*, Baird, p. 333, pl. xxxv. fig. 5.

1900. *Lernæopoda elongata*, T. Scott, p. 171, pl. viii. figs. 11-15.

Taken on the Smooth Hound, *Mustelus vulgaris*, at Polperro (A. M. N.).

LERNÆOPODA BIDISCALIS, Kane.

1892. *Lernæopoda bidiscalis*, W. F. de V. Kane, Proc. Roy. Irish Acad. ser. 3, vol. ii. p. 203, pls. ix., x.

1900. *Lernæopoda bidiscalis*, T. Scott, p. 172.

About 1862 W. Laughrin sent specimens of this species to A. M. N. from Polperro, where it was taken on *Mustelus vulgaris*, the Smooth Hound.

THYSANOTE IMPUDICA (Nordmann).

1832. *Brachiella impudica*, Nordmann, Mikrogr. Beiträge, vol. ii. p. 92, pl. viii. fig. 1.

1900. *Thysanote impudica*, T. Scott, p. 169, pl. viii. figs. 2-5.

A number of specimens from different species of Gurnards, *Trigla cuculus*, *T. gurnardus*, and *T. hirundo*, at Plymouth (Bassett-Smith); Polperro and Starcross (A. M. N.).

CHAROPINUS DALMANNI (Retzius).

1838. *Lernæopoda Dalmanni*, Krøyer, Naturhist. Tidssk. vol. i. p. 264, pl. ii. fig. 3.

1862. *Lerneopoda Dalmanni*, Turner & Wilson, "On the Structure of *Lerneopoda Dalmanni*," Trans. Roy. Soc. Edin. vol. xxiii. p. 77, pl. iv. figs. 1-16.

1863. *Charopinus Dalmanni*, Krøyer, Naturhist. Tidssk. ser. 3, p. 280, pl. xiv. fig. 6.

1900. *Charopinus Dalmanni*, T. Scott, p. 169, pl. viii. figs. 6-10, ♂ ♀.

In the nostrils of Skates at Polperro (A. M. N.).

Turner and Wilson completely misunderstood the mouth-organs of this species, turning the mouth upside down and naming the antennules first feet, and the first feet antennules.

BRACHIELLA THYNNI, Cuvier.

(Year?) *Brachiella thynni*, Guérin, Iconog. d. Règne Animal, Zoophytes, pl. ix. figs. 6-6 c.

1832. *Brachiella thynni*, Nordmann, Mikrogr. Beiträge, vol. ii. p. 90.

1840. *Brachiella thynni*, Milne-Edwards, Hist. Nat. des Crust. vol. iii. p. 512.

On the Tunny (*Thynnus thynnus*) at Polperro (A. M. N.), and on the same fish at Plymouth (Bassett-Smith).

BRACHIELLA BISPINOSA, Nordmann.

1832. *Brachiella bispinosa*, Nordmann, Mikrogr. Beiträge, vol. ii. p. 94, pl. viii. figs. 4-7.

1901. *Brachiella bispinosa*, T. Scott, p. 132.

Abundant on gills of various Gurnards, *Trigla cuculus*, *gurnardus*, and *lyra*, at Plymouth (*Bassett-Smith*).

BRACHIELLA INSIDIOSA, Heller.

1865. *Brachiella insidiosa*, Heller, 'Novara' Reise, Crustaceen, p. 239. pl. xxiv. fig. 1, ♀.

1896. *Brachiella insidiosa*, Bassett-Smith, Ann. & Mag. Nat. Hist. ser. 6, vol. xviii. p. 14, pl. vi. fig. 2, ♂.

1900. *Brachiella insidiosa*, T. Scott, p. 175, pl. viii. figs. 40, 41, ♂ ♀.

Attached to the gill-rays of the Hake (*Gadus merluccius*) at Plymouth; fairly common (*Bassett-Smith*).

BRACHIELLA MERLUCCII, Bassett-Smith.

1896. *Brachiella merluccii*, Bassett-Smith, Jour. Marine Biol. Assoc. vol. iv. p. 163.

1896. *Brachiella merluccii*, Bassett-Smith, Ann. & Mag. Nat. Hist. ser. 6, vol. xviii. p. 14, pl. vi. figs. 1, 1 a.

1900. *Brachiella merluccii*, T. Scott, p. 175, pl. viii. fig. 42.

This species was found by Bassett-Smith at Plymouth, who writes of it: "These animals are always found attached to the *points of the gill-rakers* of the Hake, *Gadus merluccius*, and never attached to the gill-rays themselves as *B. insidiosa*. Both are frequently found on the same fish, but their positions were never other than those noted."

BRACHIELLA TRIGLÆ (Claus).

1860. *Brachiella triglæ*, Claus, "Zur Morphologie der Copepoden," Würzburgen naturwiss. Zeits. vol. i. p. 32, fig. 6, ♂; and Quart. Journ. Micr. Sci. 1861, p. 296, pl. x. fig. 6.

1877. *Anchorella triglæ*, Kurz, "Studien über die Familie der Lernæopoden," Zeits. f. wiss. Zool. vol. xxix. p. 404; pl. xxiv. figs. 13-15, ♀; pl. xxv. figs. 22, 23, ♂; pl. xxvi. figs. 46, 47, ♀.

1896. *Brachiella triglæ*, Bassett-Smith, Ann. & Mag. Nat. Hist. ser. 6, vol. xviii. pl. vi. fig. 3, ♂.

1901. *Brachiella triglæ*, T. Scott, p. 133, pl. vii. figs. 24-29.

On gills of various Gurnards, *Trigla cuculus*, *gurnardus*, and *hirundo*, at Plymouth, but not very common (*Bassett-Smith*).

ANCHORELLA EMARGINATA, Kröyer.

1838. *Anchorella emarginata*, Kröyer, Naturhist. Tidssk. vol. i. p. 287, pl. iii. figs. 7 a-e, ♂ ♀.

1851. *Anchorella emarginata*, Van Beneden, "Recher. sur quelques Crust. infér.," Ann. des Sci. Nat. ser. 3, vol. xvi. p. 113, pl. vi. figs. 4-6, ♂ ♀.

1877. *Anchorella emarginata*, Kurz, Zeits. f. wiss. Zool. vol. xxix. p. 398, pl. xxv. fig. 8.

1900. *Anchorella emarginata*, T. Scott, p. 176, pl. viii. figs. 49-51, ♀.

On gill-rakers of the outer branchiæ of *Clupea alosa* at Plymouth (*Bassett-Smith*).

ANCHORELLA UNCINATA (O. F. Müller).

1850. *Anchorella uncinata*, Baird, p. 337, pls. xxxv. fig. 9; xxxvi. figs. 4, 5, ♂ ♀.

1879. *Anchorella uncinata*, C. Vogt, Crust. Parasites des Poissons, p. 60, pl. iv. figs. 2-7, ♂ ♀.

1900. *Anchorella uncinata*, T. Scott, p. 177, pl. viii. figs. 43, 44.

Very common in the neighbourhood of Plymouth, and Bassett-Smith records it as found in the folds of the skin around the mouth, and in the gill-cavity of cod, pollock, whiting, and whiting-pout; it is also very common at Polperro and Falmouth.

ANCHORELLA QUADRATA, Bassett-Smith.

1896. *Anchorella quadrata*, Bassett-Smith, Jour. Marine Biol. Lab. vol. iv. p. 163.

1896. *Anchorella quadrata*, Bassett-Smith, Ann. & Mag. Nat. Hist. ser. 6, vol. xviii. p. 15, pl. iv. fig. 5.

A few specimens found attached to the gill-rakers of *Callionymus lyra* at Plymouth (*Bassett-Smith*).

ANCHORELLA PARADOXA, P. J. van Beneden.

1851. *Anchorella paradoxa*, P. J. van Beneden, "Recherches sur quelques Crust. infér.," Ann. des Sci. Nat. ser. 3, vol. xvi. p. 117, pl. vi. fig. 1.

1896. *Anchorella paradoxa*, Bassett-Smith, Ann. & Mag. Nat. Hist. ser. 6, vol. xviii. p. 15, pl. v. fig. 2.

At Plymouth, found on the gills of *Scomber scomber*, but rare (*Bassett-Smith*).

Tribe VIII. HERPYLLOBIOIDA.

Fam. HERPYLLOBIIDÆ.

SACCOPSIS ALLENI, É. Brumpt.

Saccopsis Alleni, É. Brumpt, C. R. Acad. Paris, vol. cxxiv. p. 1464, fig. (*vide* Allen).

1894. *Saccopsis Alleni*, in Journ. Marine Biol. Assoc. vol. vii. p. 236 (no description).

Plymouth, on *Polycirrus aurantiacus* (É. Brumpt).

Order XII. CIRRIPIEDIA.

Tribe I. THORACICA.

Div. 1. Pedunculata.

Fam. 1. LEPADIDÆ.

LEPAS ANATIFERA, Linné.

On drifted wood, Devon (*Montagu*); on floating wood, Plymouth (*Biol. Lab.*); and on ships' bottoms and floating cork, Plymouth (*T. V. Hodgson*, iv. p. 178).

LEPAS ANSIFERINA, Linné.

Drifted wood, Devon (*Montagu*); Plymouth (*Cocks*).

LEPAS HILLII, Leach.

An occasional visitor on wood, corks, &c. in the neighbourhood of Falmouth, recorded as *L. lewis* (*Cocks*).

LEPAS FASCICULARIS, Ellis & Solander.

Found occasionally floating off the coasts on cork, &c. *Cocks* records it as found at Falmouth on *Fucus vesiculosus*. Thrown up in considerable abundance on the coast of Devon between Milton and Thurlstone (*Montagu*, Test. Brit. vol. iii. p. 163).

LEPAS PECTINATA, Spengler.

Captain Brown records it under the name *Pentelasmis radula* as found on the Devonshire coast, but very rare; and *Cocks*, who calls it *Anatifera sulcata*, gives it as rare on cork at Falmouth.

CONCHODERMA AURITA (Linné).

On ships' bottoms stranded on the Devonshire coast (*Captain Brown*) ; Plymouth (*Biol. Lab.*) ; Plymouth on ships' bottoms (*T. W. Hodgson*, iv. p. 175). Ships' bottoms, Falmouth (*Cocks*).

CONCHODERMA VIRGATA (*Spengler*).

Ships' bottoms at Falmouth (*Cocks*).

The *Cineras aurita* Captain Brown found at Plymouth is clearly referable to this species, which no doubt occasionally is brought to the Devon and Cornish coasts, but neither this nor the two preceding species are true natives.

Fam. 2. ALEPADIDÆ.

ALEPAS PARASITA, Sander Rang.

Under the name *Cineras parasita*, Cocks writes : " Attached to the umbrella of *Cyanæa tuberculata* ;" and Darwin writes : " Mr. Cocks informs me that an Alepas, apparently *A. parasita*, has been cast on shore near Falmouth attached to a *Cyanæa* ; and that two other specimens adhered to the bottom of a vessel arriving at that port from Odessa" (*Darwin*, *The Lepadidæ*, p. 159). It is recorded from Loire-Inférieure by M. Cailliaud.

Fam. 3. POLLICIPEDIDÆ.

SCALPELLUM VULGARE, Leach.

Common off Start Bay, Plymouth and Falmouth, attached to Hydroids (*Tubularia*, *Sertularia*, &c.) (*A. M. N.*).

POLLICIPES CORNUCOPIA, Leach.

Montagu (*Test. Brit.* vol. iii. p. 7) was assured by Mr. Laskey that he observed the species on the bottom of a vessel that had been upset and towed into Dartmouth, mixed with *L. anatifera* and *ansiferina*, which completely covered the lower part of the vessel. We (*A. M. N.*) have found it living in great abundance on the shore at Santander in North Spain, and Paul Fischer records it from La Gironde as found on all the rocky coasts. The most northern locality which Darwin gave was Portugal.

Div. 2. Operculata.

Fam. 4. BALANIDÆ.

BALANUS TINTINNABULUM (Linné).

From wreck-timber, Castle Point, Falmouth (*W. P. Cocks*); ships' bottoms at Plymouth (*Biol. Lab.*).

BALANUS SPONGICOLA, Brown.

"Found by Dr. Leach in a sponge on the Devonshire coast, and is not uncommon" (*Captain Brown*). Off Plymouth on *Pecten opercularis* (*A. M. N.*).

BALANUS PERFORATUS, Bruguière.

This is *Balanus communis* of Pulteney and of Montagu; and *B. Cranchii* of Leach and Brown. It is very abundant between tide-marks in Devon and Cornwall, but is a southern species which is not found far up our coasts.

BALANUS AMPHITRITE, Darwin.

On ships' bottoms, Plymouth (*Biol. Lab.*), but, like *B. tintinnabulum*, not indigenous.

BALANUS PORCATUS, E. da Costa.

Cocks records *B. costatus*, Donovan, which is a synonym of this species, from deep water at Falmouth; and Spence Bate ("On the Development of the Cirripedia," *Ann. & Mag. Nat. Hist.* ser. 2, vol. viii. p. 324) figures the young as reared by him at Plymouth.

BALANUS CRENATUS, Bruguière.

Plymouth (*A. M. N.*), and it is probably that species which Cocks records from Falmouth under the name *B. rugosus*.

BALANUS BALANOIDES, Linné.

Common. Spence Bate (*l. c.*) figures the young; and Cocks records from Falmouth its varieties under several names.

ACASTA SPONGITES, Poli.

In a sponge off Budleigh Salterton (*A. M. N.*). Cocks records it from Falmouth on sponge from deep water under the name *Acasta Montagu*, Leach.

Fam. 5. CHTHAMALIDÆ.

CHTHAMALUS STELLATUS (Poli).

Common between tide-marks and in shallow water. Mr. Spence Bate has figured the young reared by him at Plymouth ("On the Development of the Cirripedia," Ann. & Mag. Nat. Hist. ser. 2, vol. viii. p. 324, pl. vii. figs. 11, 14; pl. viii. figs. 12, 13); his name for the species being "*Chthamalus depressus*?, Poli = *Balanus punctatus*, Montagu."

Fam. 6. CREUSIIDÆ.

PYRGOMA ANGLICUM, G. B. Sowerby.

Not uncommon off the coasts of Devon and Cornwall, more especially off the latter. Attached to the calyx of *Caryophyllia cyathus* off Plymouth and Polperro (A. M. N.); Falmouth (W. P. Cocks).

Fam. 7. VERRUCIDÆ.

VERRUCA STRÖMIA (O. F. Müller).

This species was described by Müller in 1776, and in the following year it was described by Pennant under the name *Lepas striata*. It is dredged attached to shells and stones not unfrequently off the south-west coast.

Tribe II. CRYPTOSOMATA, A. Hancock.

= ACROTHORACICA, Gruvel.

Fam. TRYPETESIDÆ.

TRYPETESA LAMPAS (A. Hancock).

1849. *Alcippe lampas*, A. Hancock, Ann. & Mag. Nat. Hist. ser. 2, vol. iv. p. 303, pls. viii. & ix.

1853. *Alcippe lampas*, Darwin, Monog. Cirripedia, Balanidæ, p. 530, pl. xxii.

1903. *Trypetesa lampas*, Norman, Ann. & Mag. Nat. Hist. ser. 7, vol. xi. p. 369.

Hancock instituted a new Order *Cryptosomata* to receive this genus; Darwin rejected it, and even embraced this genus in the Fam. *Lepadidæ*. The name *Alcippe* being previously in use among Birds, it has been necessary to substitute a new generic name.

Off the Eddystone Lighthouse (*C. Spence Bate* fide Darwin). In *Baccinum undatum* off Falmouth (W. P. Cocks).

Tribe III. RHIZOCEPHALA.

Fam. PELTOGASTRIDÆ.

PELTOGASTER PAGURI, Rathke.

On small specimens of *Pagurus bernhardus* from Teignmouth Bay (A. M. N.).

PELTOGASTER SULCATUS, Lilljeborg.

On examples of *Pagurus cuanensis* dredged in Teignmouth Bay (A. M. N.).

SACCOLINA CARCINI, J. V. Thompson.

Of unusually large size on *Carcinus mænas*, Falmouth (A. M. N.); the bar, Exe River (Todd, vi. p. 325).

SACCOLINA PHALANGII, Hoek.

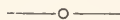
1878. *Saccolina phalangii*, Hoek, "Carcinologische Aanteekeningen, Bijdrage tot de Kennis der Noordzee-Fauna," Tijdsch. der Nederl. Dierk. Vereen. vol. iii. p. 3 (separate copy).

On the abdomen of *Stenorhynchus longirostris* at Plymouth, 1903 (A. M. N.). The type specimen of Hoek was parasitic on *Stenorhynchus rostratus*.

SACCOLINA GALATHEÆ, sp. n.

We give this name to a little form found on the abdomen of *Galathea intermedia*, taken off Plymouth in 1889. There is little or no character in the species of this genus; but it can hardly be supposed that the very small form found upon *G. intermedia* can be the same as that which is common on *Carcinus mænas*.

ADDENDA.



Genus SPHÆROMA, p. 43, *add* :—

SPHÆROMA HOOKERI, Leach.

1868. *Sphæroma Hookeri*, Bate & Westwood, vol. ii. p. 410.

1873. *Sphæroma Hookeri*, E. Parfitt, "The Fauna of Devon," Pt. IX.
"Sessile-Eyed Crustacea," Trans. Devonshire Assoc. Advancement
of Science, Lit. & Art, p. 21.

Mr. Parfitt records this species from "among weeds in a ditch in the Topsham Marshes, near the Bridge."

Genus GAMMARUS, p. 79, *add* :—

GAMMARUS EDWARDSII, Spence Bate.

1862. *Gammarus Edwardsii*, Bate, Cat. Amphip. Brit. Mus. p. 208,
pl. xxxvii. fig. 2.

1862. *Gammarus Edwardsii*, Bate & Westwood, vol. i. p. 386.

"Two specimens of this species were found by us in a pond at Starcross, Devonshire, into which the tide formerly flowed, but which has been cut off by the railway embankment, so that we are not aware that the sea has flowed into it for many years, while a small freshwater stream constantly runs into it."—B. & W.

Nothing more is known of this *Gammarus*, which remains to be rediscovered.

Genus THAUMALEUS, p. 204, *add* :—

THAUMALEUS RIGIDUS (I. C. Thompson).

1888. *Cymbasoma rigidum*, I. C. Thompson, Linn. Soc. Journ.,
Zool. vol. xx. p. 154, pl. xiii. figs. 1-4.

1890. *Monstrilla rigida*, G. C. Bourne, Quart. Journ. Micros. Sci.
n. s. vol. xxx. p. 575, pl. xxxvii. figs. 8, 11, 12.

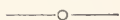
1892. *Thaumaleus Claparedii*, Giesbrecht, pp. 578-585, pl. xlvi.
figs. 5, 15, 21, 26.

1892. *Monstrilla rigida*, R. Vallentin, Roy. Cornwall Polytech. Soc.
59th Report, p. 97.

1904. *Thaumaleus rigidus*, T. Scott, 22nd Rept. Fishery Board for
Scotland, p. 248, pl. xiii. figs. 15-17; pl. xiv. fig. 19.

Off the Cornish coast (*R. Vallentin, l. c.*).

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PLATE I.

Fig. 1. *Tanaissus Lilljeborgi* (Stebbing), p. 34, antennule ♀.

2. " " cheliped ♀.

3. " " second leg ♀.

4. " " terminal joints last leg ♀.

5. " " uropod ♀.

6. " " antennule and antenna ♂.

7. " " cheliped ♂.

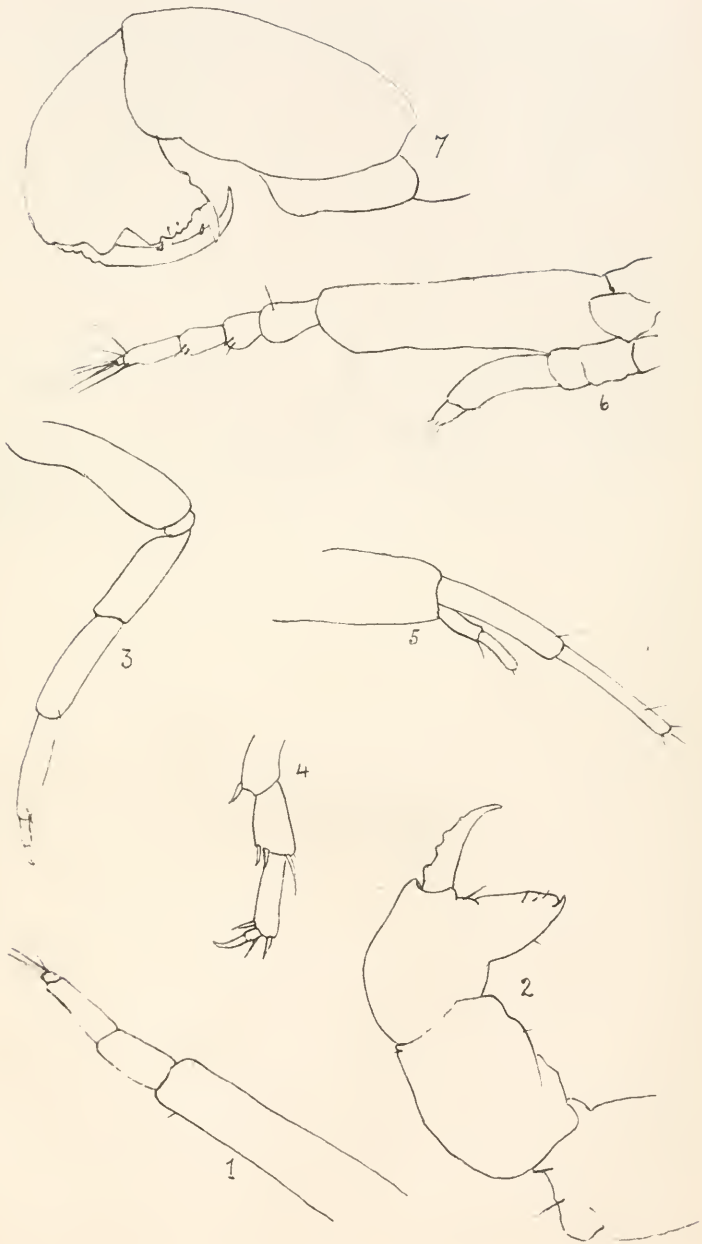


PLATE II.

- Fig. 1. *Gnathia maxillaris* (Montagu), p. 36, antennule and antenna ♂.
2. " " mandible ♂.
3. " " anterior leg ♂.
4. " " cephalosome ♂.
5. " " front margin of cephalosome ♂.
6. " " telson and uropod ♂.
7. " " pleopod ♂.
8. " " head of female.
9. *Gnathia oxyurea* (Lilljeborg), p. 37, mandible ♂.
10. " " anterior leg ♂.

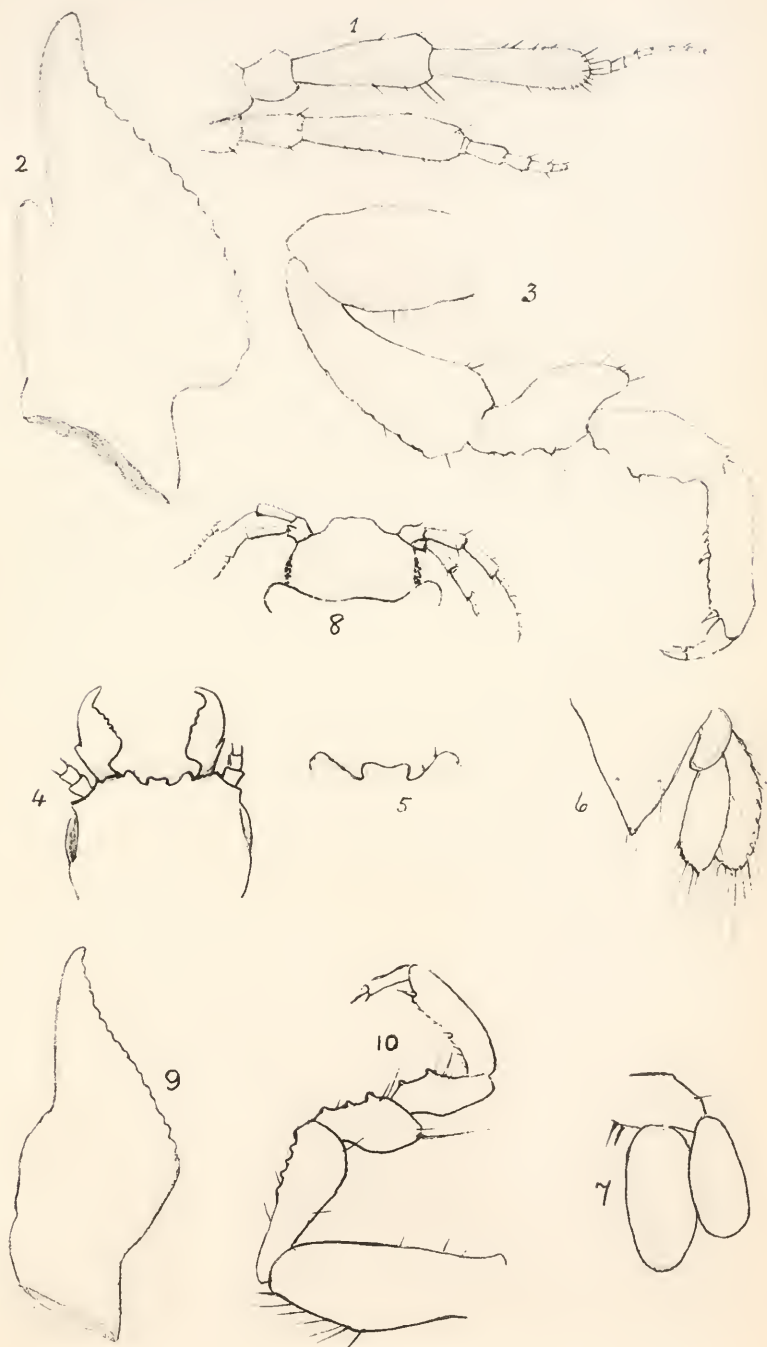


PLATE III.

Fig. 1. *Gnathia oxygurea* (Lilljeborg), p. 37, front margin of cephalosome ♂.

2. ,, ,, pleopod ♂.
3. ,, ,, telson ♂.
4. ,, ,, uropod ♂.
5. ,, ,, cephalosome of female.
6. *Rocinela danmoniensis* (Leach), p. 38, cephalosome.
7. ,, ,, telson.
- 7*. ,, ,, extremity of telson.
8. ,, ,, uropod.
9. *Rocinela Dumerilii* (Lucas), p. 39, cephalosome from above.
10. ,, ,, ditto, side view.
11. *Eurydice pulchra*, Leach, p. 42, telson.
12. *Eurydice spinigera*, H. J. Hansen, p. 42, telson.
13. *Eurydice inermis*, H. J. Hansen, p. 43, telson.
- 13*. ,, ,, telson extremity, more magnified.
14. *Eurydice truncata* (Norman), p. 42, telson.

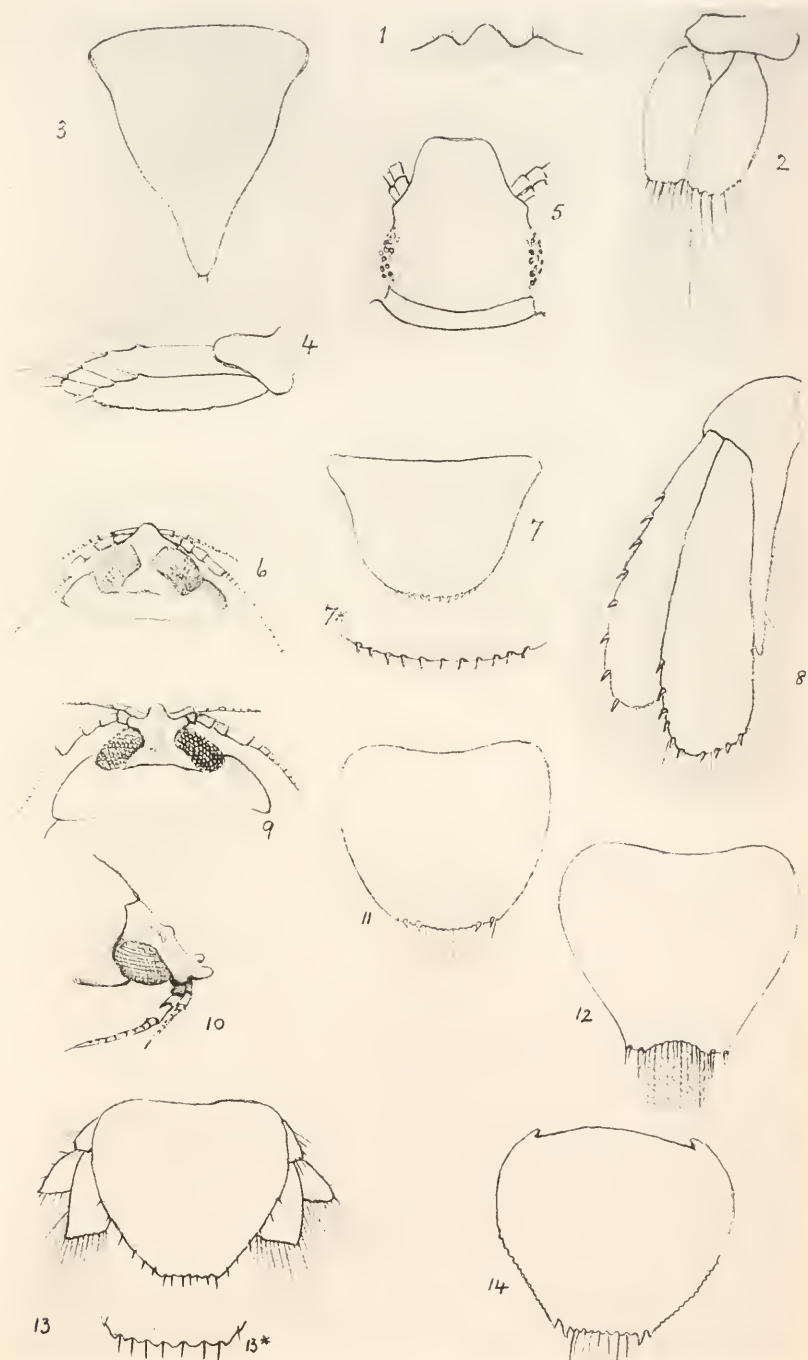




PLATE IV.

- Fig. 1. *Cirolana borealis*, Lilljeborg, p. 40, telson and uropods.
 2. *Cirolana Cranchii*, Leach, p. 40, telson and uropods.
 3. *Cymodoce truncata*, Leach, p. 44, hinder portion of body ♂.
 4. " " variety " " ♂.
 5. " " hinder portion of body ♀.
 6. " " " " young ♂?
 7. " " mandible ♀.
 8. " " first maxilla ♀.
 9. " " second maxilla ♀.
 10. " " maxilliped ♀.
 11. " " female full of young, mandible.
 12. " " " " first maxilla.
 13. " " " " second maxilla.
 14. " " " " maxilliped.

N.B.—The lines by the sides of figs. 3–6 represent the length of the entire animal, and not that of the portion which is drawn.



PLATE V.

Fig. 1. *Arcturella damnoniensis* (Stebbing), p. 48, ♀.

2. " " ♂.

3. " " antennule.

4. " " antenna—last joints of.

5. " " first foot.

6. *Astacilla Deshayesii* (Lucas), p. 47, ♀.

7. " " ♂.

8. " " antennule.

9. " " antenna.

10. " " first foot.

11. *Leptocheirus fasciatus*, Costa, p. 88, first gnathopod:

(a) coxa.

12. " " first gnathopod: palm and finger
more magnified.

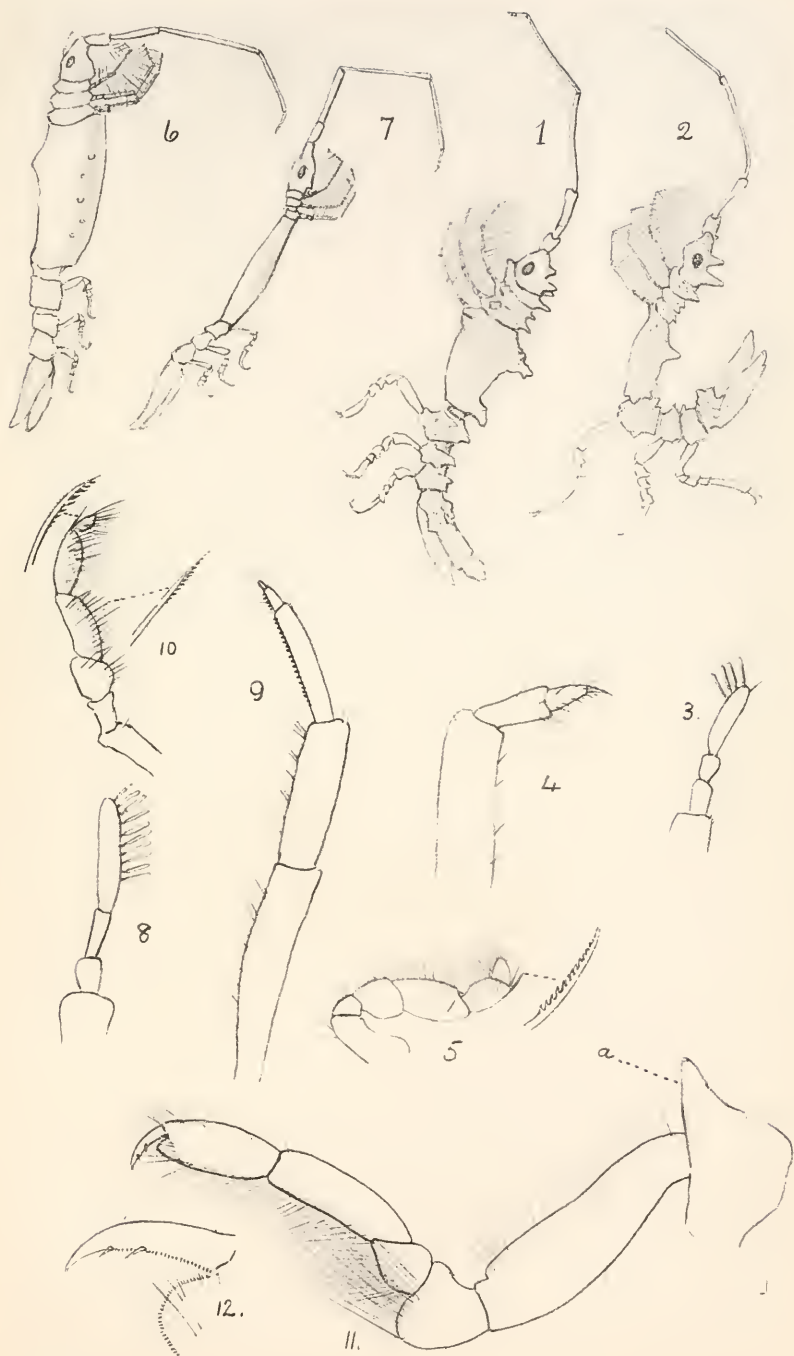


PLATE VI.

- Fig. 1. *Pontocrates arenarius* (Bate), p. 68, first gnathopod.
 2. ,, ,, second gnathopod.
 3. ,, ,, second gnathopod extremity, more
 magnified.
 4. ,, ,, basal joints of last peræopod.
 5. *Pontocrates norvegicus*, Boeck, p. 68, first gnathopod.
 6. ,, ,, second gnathopod.
 7. ,, ,, second gnathopod extremity, more
 magnified.
 8. ,, ,, basal joints last peræopod.

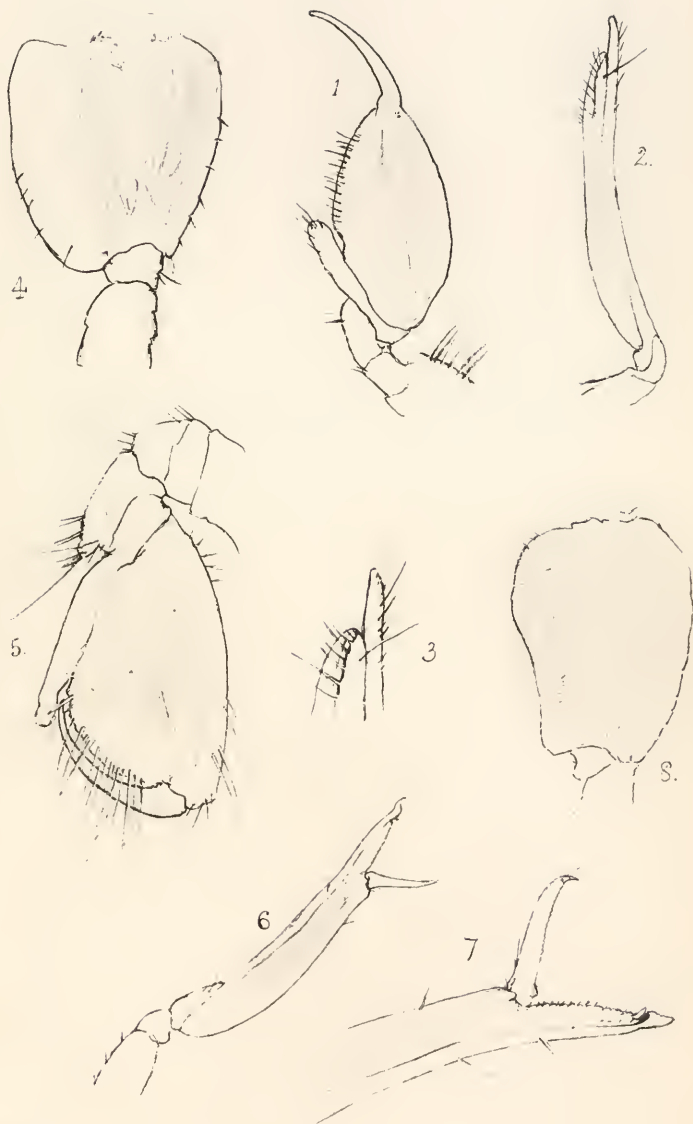




PLATE VII.

- Fig. 1. *Pontocrates altamarinus* (B. & W.), p. 69, first gnathopod.
 2. ,, ,, second gnathopod.
 3. ,, ,, second gnathopod extremity.
 more magnified.
 4. ,, ,, basal joints last peræopod.
 5. *Pontocrates arcticus*, G. O. Sars (not British), p. 70, second
 gnathopod.
 6. ,, ,, second gnathopod extremity, more
 magnified.
 7. *Synchelidium haplocheles* (Grube), p. 67, first gnathopod.
 8. ,, ,, second gnathopod.
 9. ,, ,, second gnathopod extremity, more
 magnified.

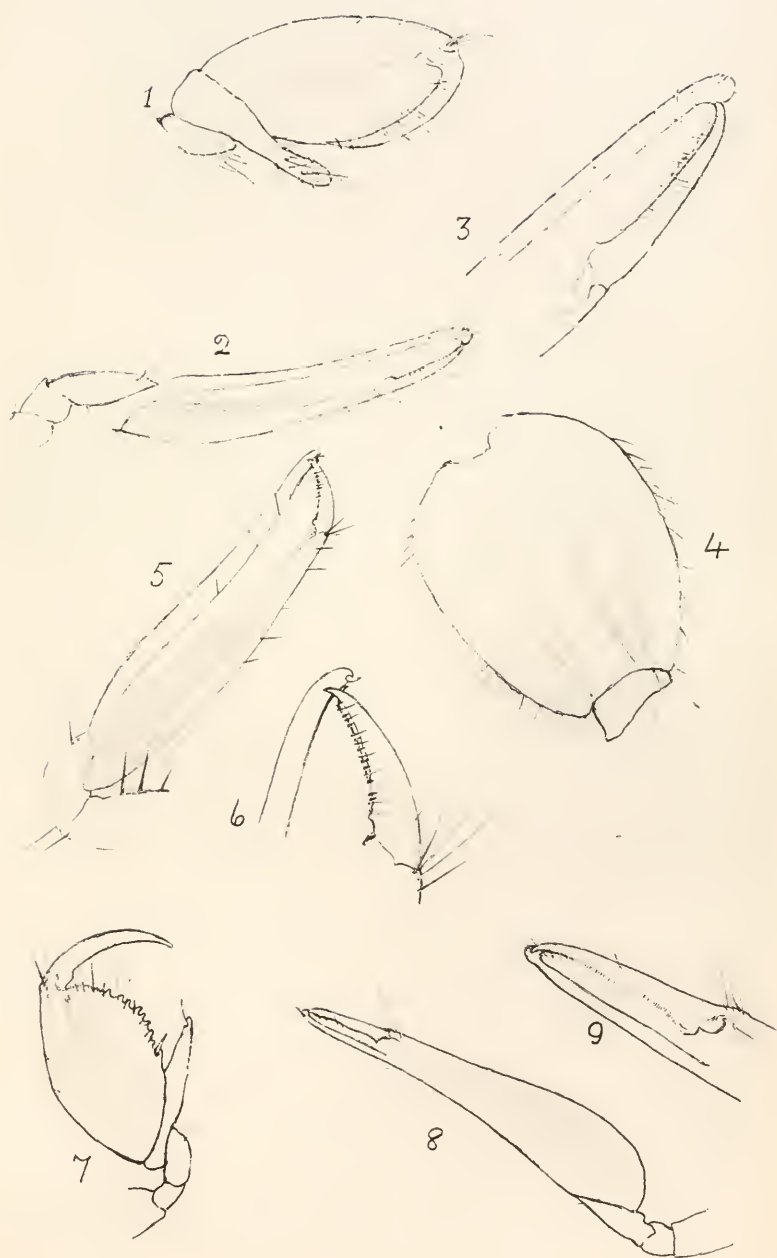


PLATE VIII.

Fig. 1. *Apherusa ovalipes*, n. sp., p. 75, first gnathopod.

- | | | | |
|-----|---|---|--|
| 2. | „ | „ | second gnathopod. |
| 3. | „ | „ | last joints first peræopod. |
| 4. | „ | „ | last joints last uropod. |
| 5. | „ | „ | dorsal spines of first two segments of metasome. |
| 6. | „ | „ | hind margin of third segment of metasome. |
| 7. | „ | „ | last uropod. |
| 8. | „ | „ | telson. |
| 9. | <i>Æga Strömii</i> , Lütken, p. 38, head. | | |
| 10. | „ | „ | telson and uropod. |

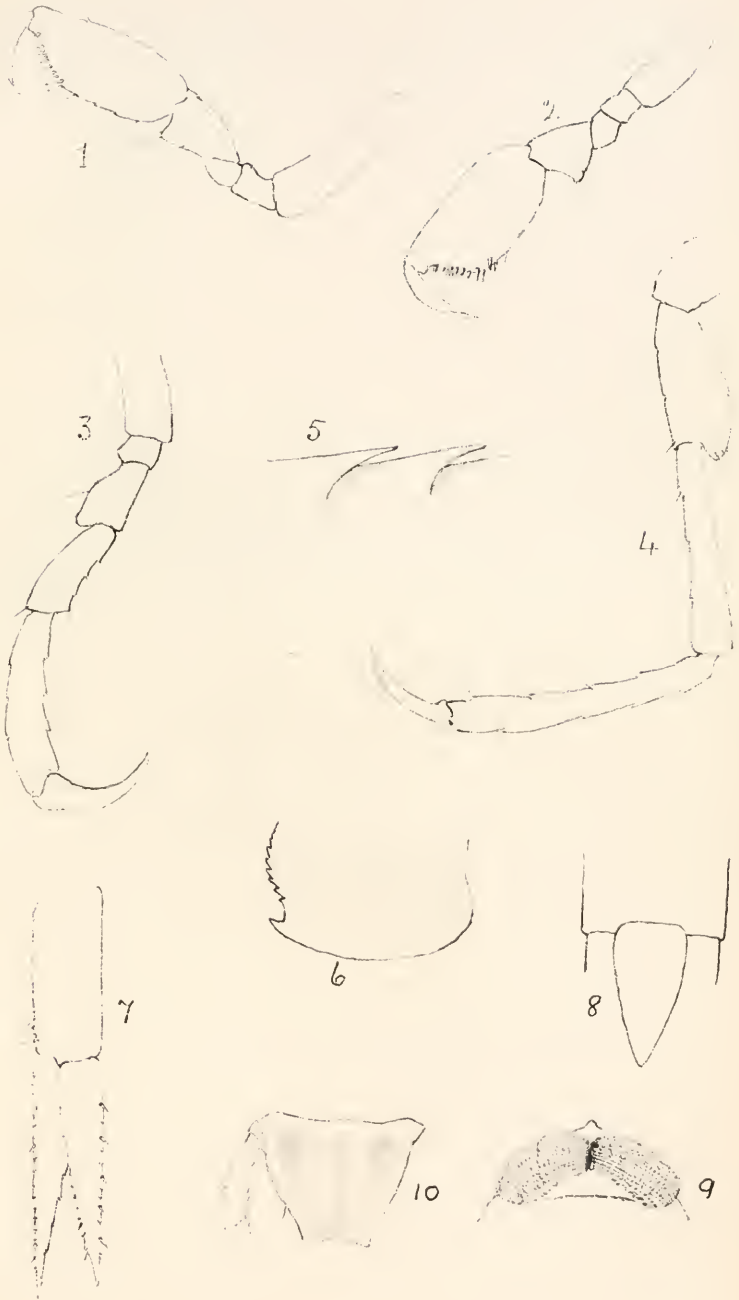


PLATE IX.

Fig. 1. *Leptocheirus pectinatus* (Norman), p. 87, accessory appendage of antennule.

2. " " first gnathopod with coxa.

2 a. " " first gnathopod finger, more magnified.

3. " " second gnathopod.

4. *Leptocheirus guttatus*, Grube, p. 85, first gnathopod.

4 a. " " first gnathopod finger, more magnified.

5. " " second gnathopod.

6. " " urosome.

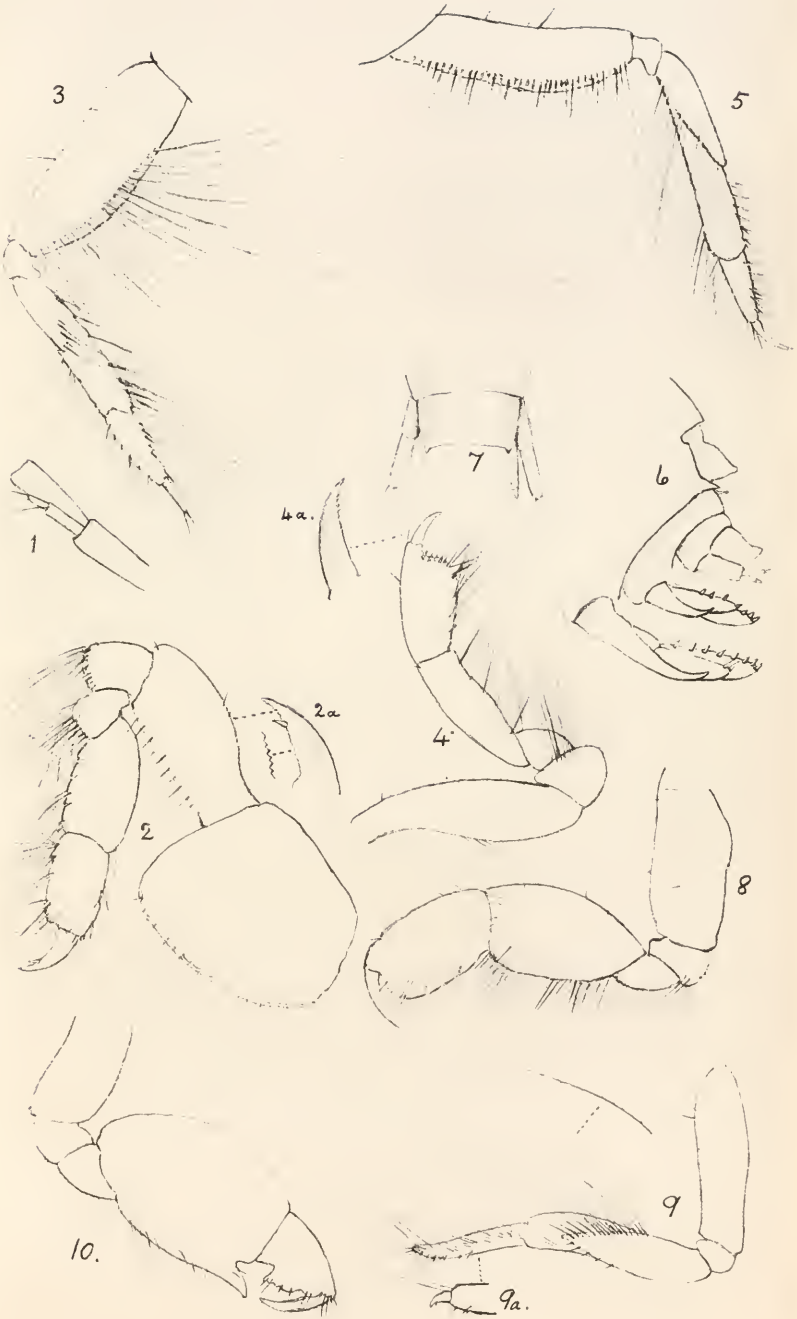
7. " " telson and last uropod.

8. *Coremapus versiculatus* (Bate), p. 85, first gnathopod ♀.

9. " " second gnathopod.

9 a. " " second gnathopod extremity in different position, more magnified.

10. " " first gnathopod ♂, less magnified than fig. 8; this gnathopod in the male being much longer than in the female.



REFERENCES TO THE DESCRIPTIONS OF THE SPECIES
WHICH ARE ILLUSTRATED IN
PLATES X.-XXI.

- Paracalanus parvus*, var. *perplexus*, nov. var., p. 127.
Robertsonia tenuis (Brady & Robertson), p. 140.
Stenhelia pygmaea, Norman & T. Scott, p. 142.
,, *simulans*, Norman & T. Scott, p. 143.
,, *neglecta*, Norman & T. Scott, p. 144.
,, *varians*, Norman & T. Scott, p. 146.
,, *longirostris*, Norman & T. Scott, p. 147.
Parastenhelia anglica, Norman & T. Scott, p. 148.
Ameira simplex, Norman & T. Scott, p. 150.
Laophonte inornata, A. Scott, p. 157.
,, *serrata* (Claus), p. 157.
,, *Herdmani*, A. Scott, p. 159.
Laophontina dubia, Norman & T. Scott, p. 165.
Ductylopusia valida, Norman & T. Scott, p. 171.
Vallentinia ornata, Norman & T. Scott, p. 173.
Megarthrum purpurocinctum, Norman & T. Scott, p. 175.
Harpacticus chelifera (O. F. Müller), p. 177.
,, *uniremis*, Kröyer, p. 178.
Peltidium conspicuum, Norman & T. Scott, p. 180.
Porcellidium lecanoides, Claus, p. 182.
Cyclops venustus, n. sp., p. 189.
,, *prasinus*, S. Fischer, p. 189.
Mesocheres anglicus, Norman & T. Scott, p. 194.
Hermannella parva, Norman & T. Scott, p. 199.

PLATE X.

- Fig. 1. *Stenhelia pygmæa* (p. 142), female, side view.
2. " " exopodite of antenna.
3. " " mandible-palp.
4. *Stenhelia neglecta*, exopodite of antenna.
5. *Stenhelia varians*, exopodite of antenna.
6. *Stenhelia simulans*, exopodite of antenna.
7. *Ameira simplex*, exopodite of antenna.
8. " " mandible-palp.
9. " " second maxilliped.
10. *Parastenhelia anglica*, exopodite of antenna.
11. " " mandible-palp.
12. *Laophontina dubia* (p. 165), male, side view.
13. " " foot of second pair (male).
14. " " foot of third pair (male).
15. " " foot of fourth pair (male).
16. *Dactylopusia valida*, exopodite of antenna.
17. *Megarthrurum purpurocinctum*, mandible and palp.
18. *Mesocheres anglicus*, first maxilliped.

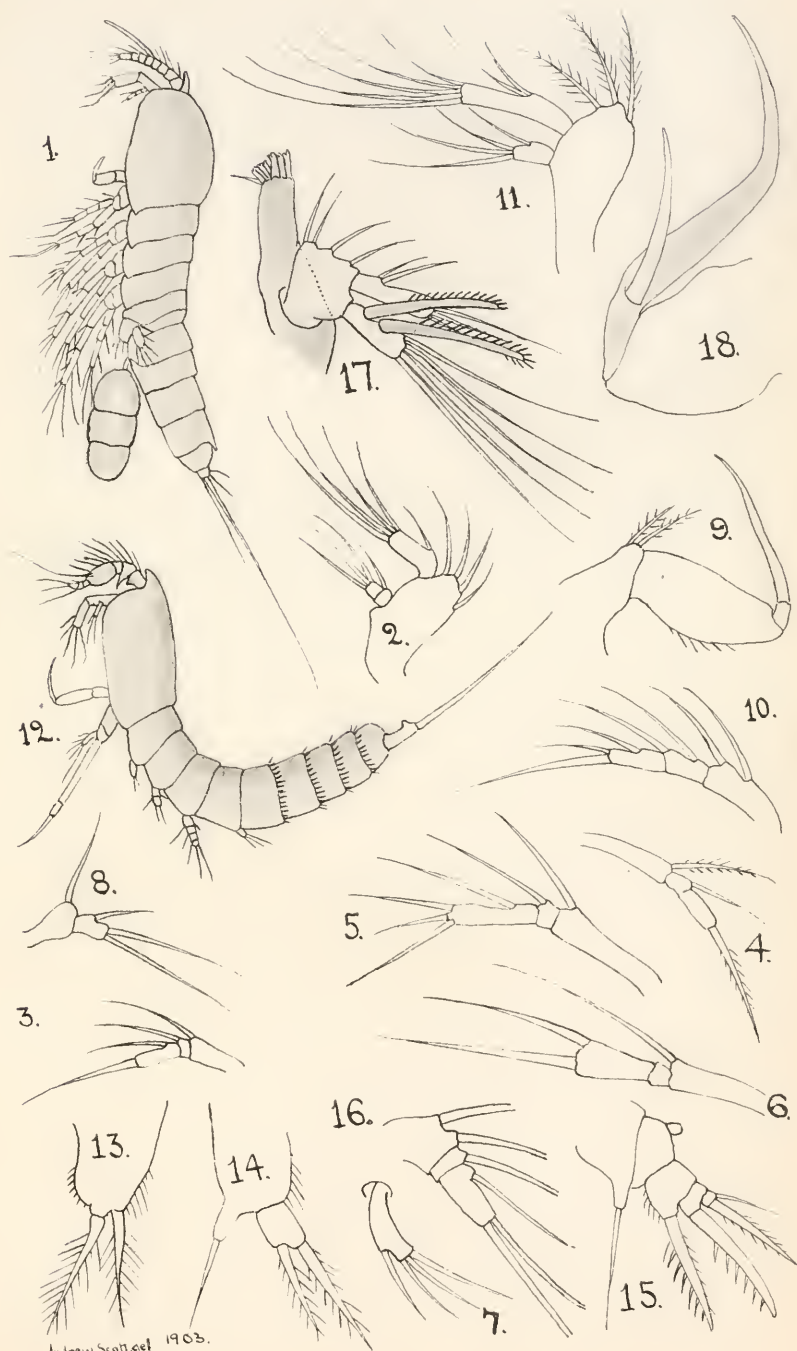
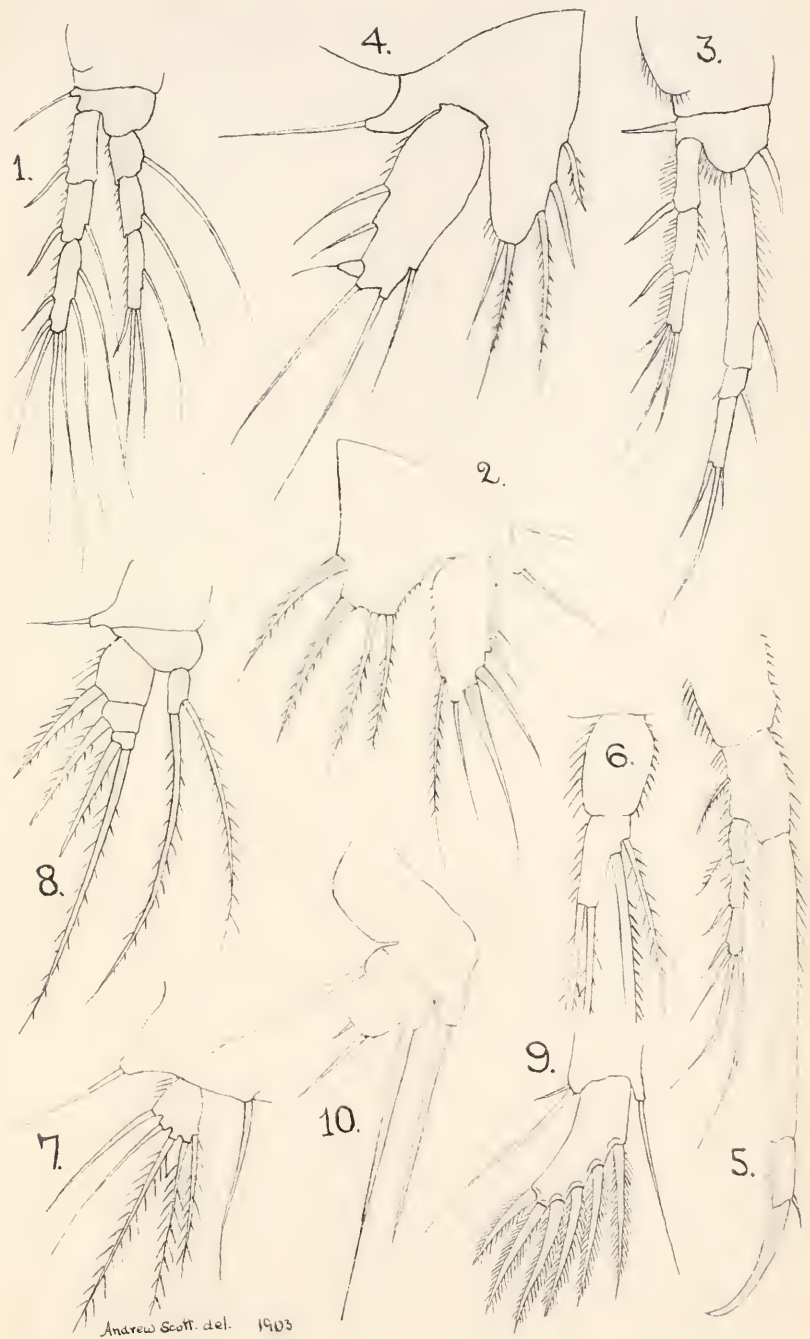


PLATE XI.

- Fig. 1. *Stenhelia pygmaea*, foot of fourth pair.
2. " " foot of fifth pair (female).
3. *Stenhelia neglecta*, foot of first pair.
4. *Stenhelia longirostris*, foot of fifth pair (female).
5. *Laophonte Herdmanni*, foot of first pair.
6. " " endopodite of second foot (male).
7. " " foot of fifth pair (male).
8. *Laophontina dubia*, foot of fourth pair (female).
9. *Peltidium conspicuum*, foot of fifth pair (female).
10. *Mesocheres anglicus*, foot of fifth pair (female).



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PLATE XII.

- Fig. 1. *Paracalanus parvus*, var. *perplexus*, left antennule (female).
2. „ „ „ „ foot of fifth pair (female).
3. *Stenhelia longirostris* (p. 147), female, side view.
4. *Ameira simplex*, right antennule (female).
5. *Laophonte inornata*, right antennule (female).
6. *Laophonte Herdmani*, left antennule (female).
7. *Laophontina dubia*, left antennule (female).
8. „ „ „ left antennule (male).
9. *Dactylopusia valida*, right antennule (female).
10. *Megarthrum purpurocinctum*, right antennule (female).
11. *Harpacticus chelifèr*, left antennule (female).
12. *Harpacticus uniremis*, left antennule (female).
13. *Mesocheres anglicus*, left antennule (female).

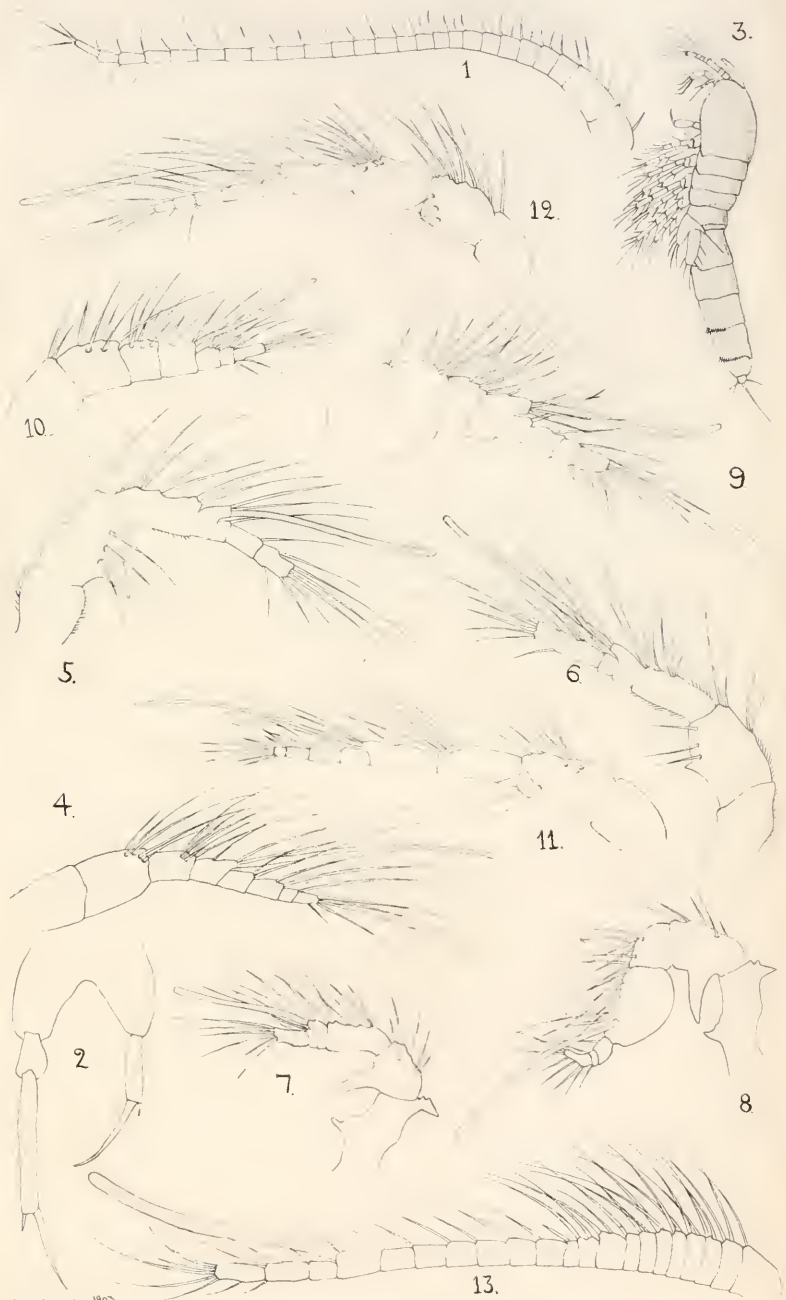


PLATE XIII.

- Fig. 1. *Paracalanus parvus*, var. *perplexus* (p. 127), female,
side view.
2. *Stenhelia neglecta* (p. 144), female, side view.
 3. *Ameira simplex* (p. 150), female, side view.
 4. *Parastenhelia anglica* (p. 148), female, side view.
 5. *Laophonte inornata* (p. 157), female, side view.
 6. *Laophonte serrata* (p. 157), male, side view.
 7. *Laophonte Herdmani* (p. 159), female, side view.
 8. *Stenhelia simulans*, second maxilliped.
 9. *Parastenhelia anglica*, second maxilliped.
 10. *Mejarthrum purpurocinctum*, second maxilliped.
 11. *Vallentinia ornata*, second maxilliped.
 12. *Dactylopsia valida*, second maxilliped.
 13. *Mesocheres anglicus*, second maxilliped.
 14. *Laophonte inornata*, right antennule (male).
 15. *Hermannella parva*, right antenna (male).

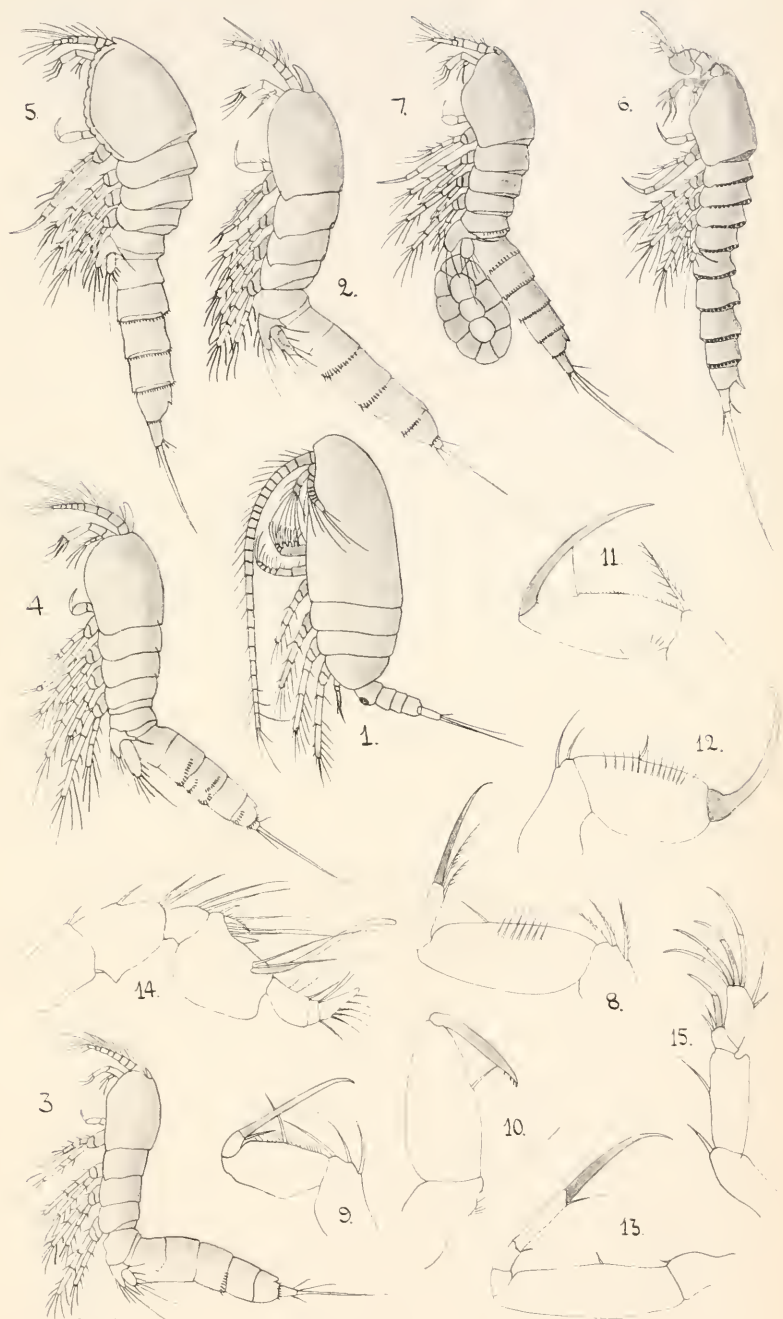


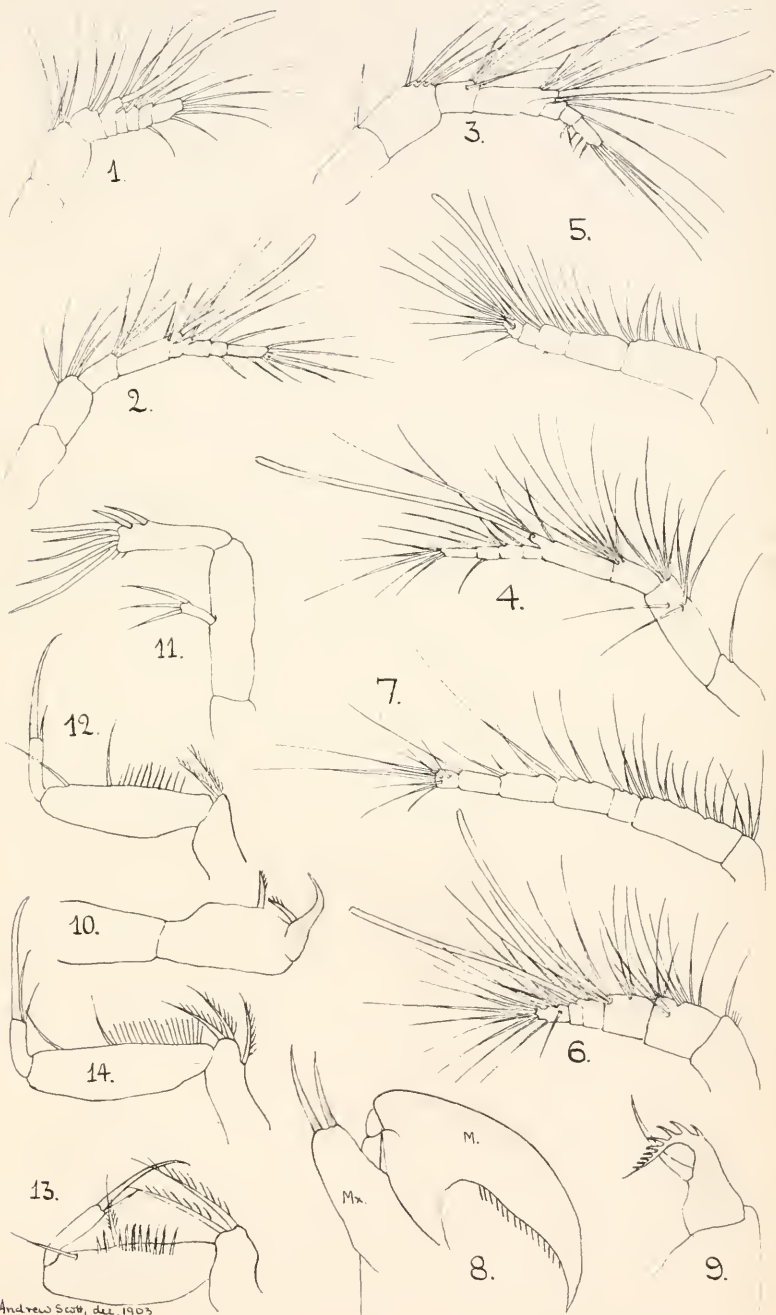
PLATE XIV.

- Fig. 1. *Paracalanus parvus*, var. *perplexa*, foot of second pair.
2. *Stenhelia neglecta*, foot of fourth pair.
3. *Stenhelia longirostris*, foot of fourth pair.
4. *Stenhelia simulans*, foot of first pair.
5. *Ameira simplex*, foot of fourth pair.
6. *Parustenhelia anglica*, foot of fourth pair.
7. *Laophonte inornata*, foot of third pair (male).
8. *Laophonte Herdmani*, foot of third pair (male).
9. *Megarthrum purpurocinctum*, foot of first pair.
10. *Fallentinia ornata*, foot of fifth pair (male).
11. *Peltidium conspicuum*, foot of first pair.
12. *Porcellidium lecanoides*, foot of fifth pair (female).
13. *Stenhelia varians*, mandible-palp.
14. *Mesocheres anglicus*, right antenna (female).



PLATE XV.

- Fig. 1. *Stenhelia pygmaea*, antennule (female).
2. *Stenhelia neglecta*, antennule (female).
3. *Stenhelia longirostris*, antennule (female).
4. *Stenhelia varians*, antennule (female).
5. *Porcellidium lecanoides*, antennule (female).
6. *Peltidium conspicuum*, antennule (female).
7. *Hermannella parva*, antennule (female).
8. " " mandible and palp.
9. " " first maxilliped.
10. " " second maxilliped.
11. *Laophontina dubia*, right antenna.
12. *Stenhelia neglecta*, second maxilliped.
13. *Stenhelia longirostris*, second maxilliped.
14. *Stenhelia varians*, second maxilliped.



Andrew Scott, dec. 1903

PLATE XVI.

- Fig. 1. *Stenhelix pygmaea*, foot of first pair.
2. *Stenhelix longirostris*, foot of first pair.
3. *Stenhelix varians*, foot of first pair.
4. *Parastenhelix anglica*, foot of first pair.
5. *Laophonte inornata*, foot of first pair.
6. *Laophonte serrata*, foot of third pair (male).
7. *Laophontina dubia*, foot of first pair.
8. *Vallentinia ornata*, foot of first pair.
9. ,, ,, foot of second pair (male).
10. ,, ,, foot of fourth pair.
11. *Cyclops vernalis*, foot of fourth pair.
12. *Hermannella parva*, foot of fourth pair.

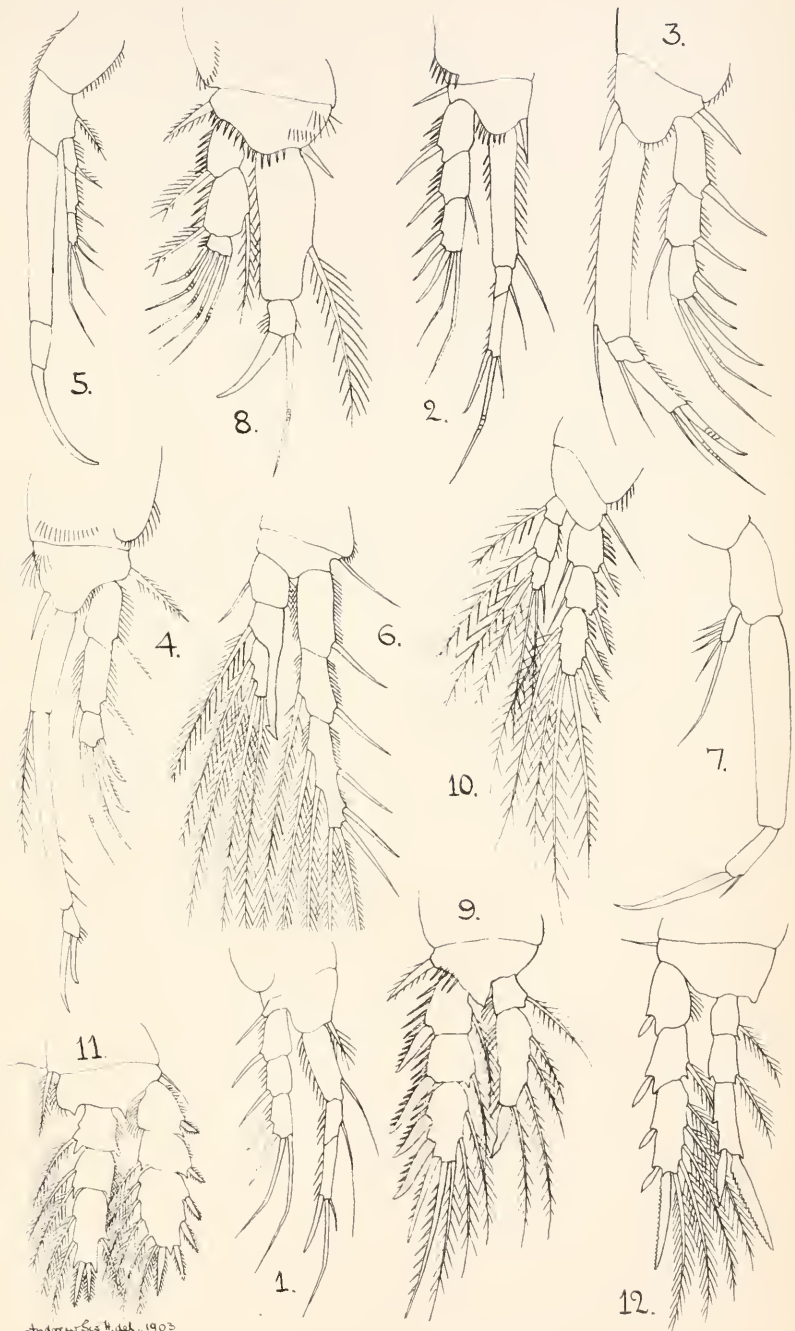


PLATE XVII.

- Fig. 1. *Stenhelix simulans*, foot of fifth pair (female).
2. *Stenhelix varians*, foot of fifth pair (female).
3. *Ameira simplex*, foot of fifth pair (female).
4. *Parastenhelix anglica*, foot of fifth pair (female).
5. *Laophonte serrata*, foot of fifth pair (male).
6. *Laophonte Herdmani*, foot of fifth pair (female).
7. *Laophontina dubia*, foot of fifth pair (female).
8. *Dactylopusia valida*, foot of fifth pair (female).
9. *Harpacticus chelifer*, foot of fifth pair (female).

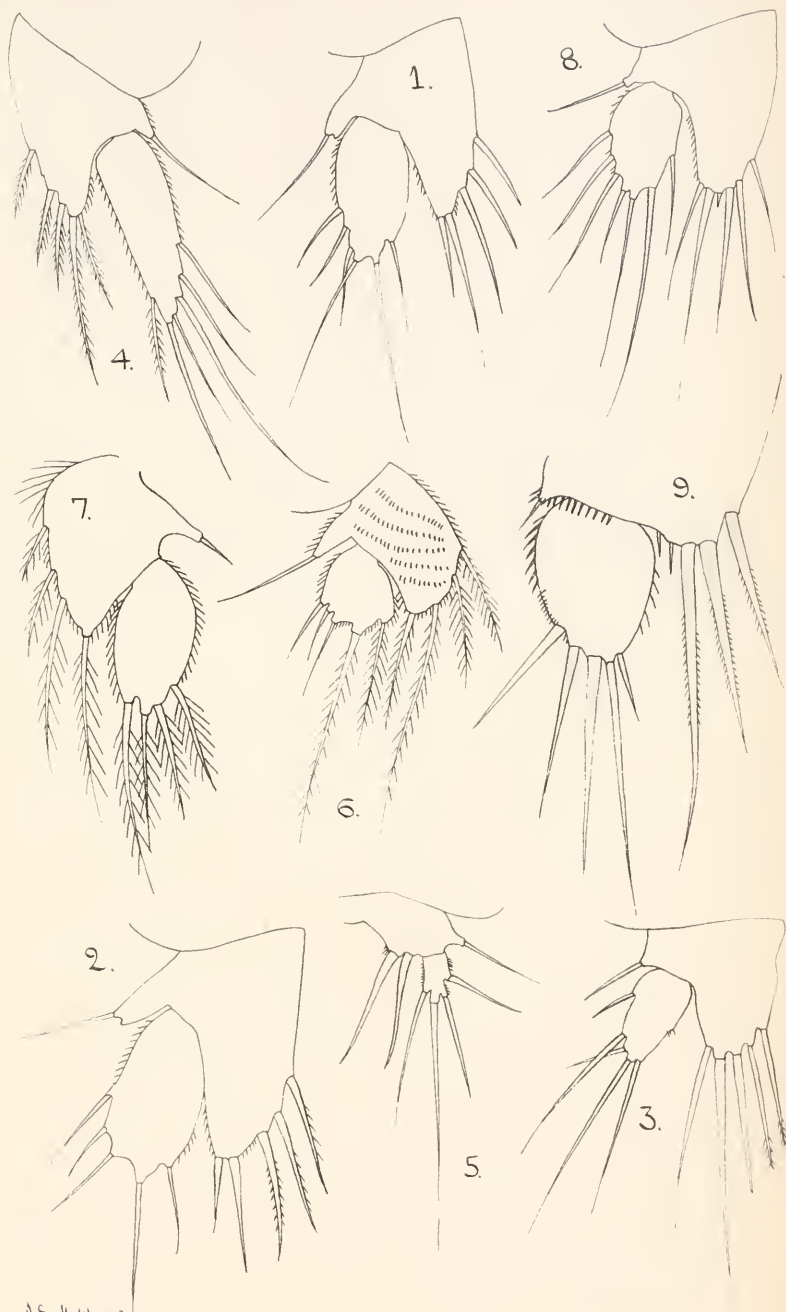
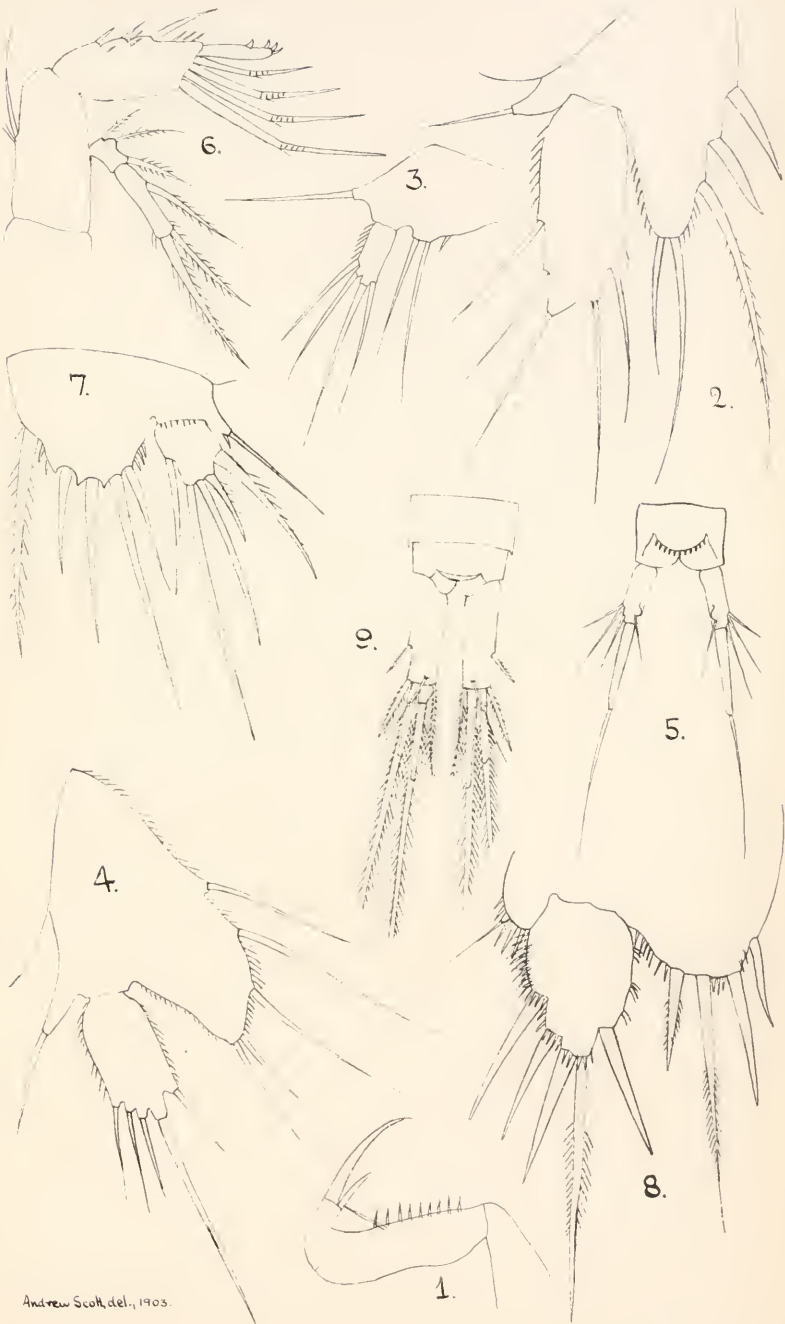


PLATE XVIII.

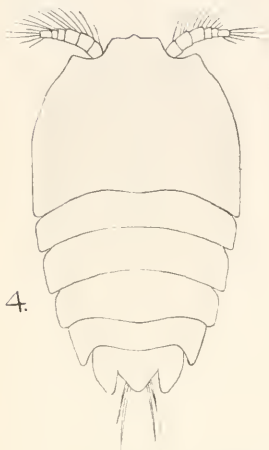
- Fig. 1. *Stenhelia pygmaea*, second maxilliped.
2. *Stenhelia neglecta*, foot of fifth pair (female).
3. *Laophonte inornata*, foot of fifth pair (male).
4. „ „ foot of fifth pair (female).
5. *Laophontina dubia*, abdomen and furcal joints.
6. *Megarhtrum purpurocinctum*, right antenna.
7. *Vallentinia ornata*, foot of fifth pair (female).
8. *Harpacticus uniremis*, foot of fifth pair (female).
9. *Cyclops venustus*, abdomen and furcal joints.



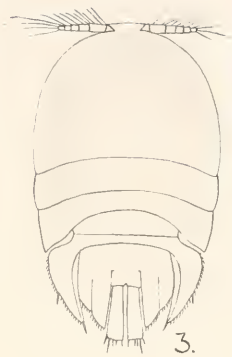
Andrew Scott del., 1903.

PLATE XIX.

- Fig. 1. *Megarhrum purpurocinctum* (p. 175), female, dorsal view.
2. *Vallentinia ornata* (p. 173), female, dorsal view.
3. *Porcellidium lecanoides* (p. 182), female, dorsal view.
4. *Peltidium conspicuum* (p. 180), female, dorsal view.
5. *Hermannella parva* (p. 190), female, dorsal view (*a* = fifth feet).
6. *Mesocheres anglicus* (p. 194), female, dorsal view.



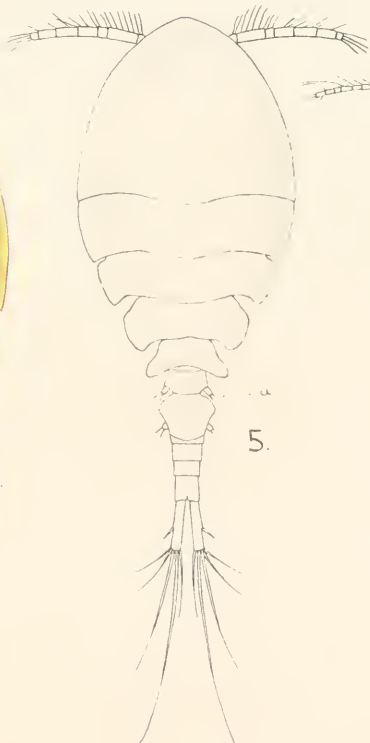
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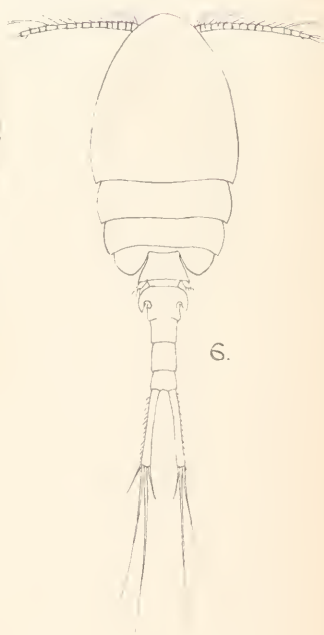
3.



1.



5.



6.

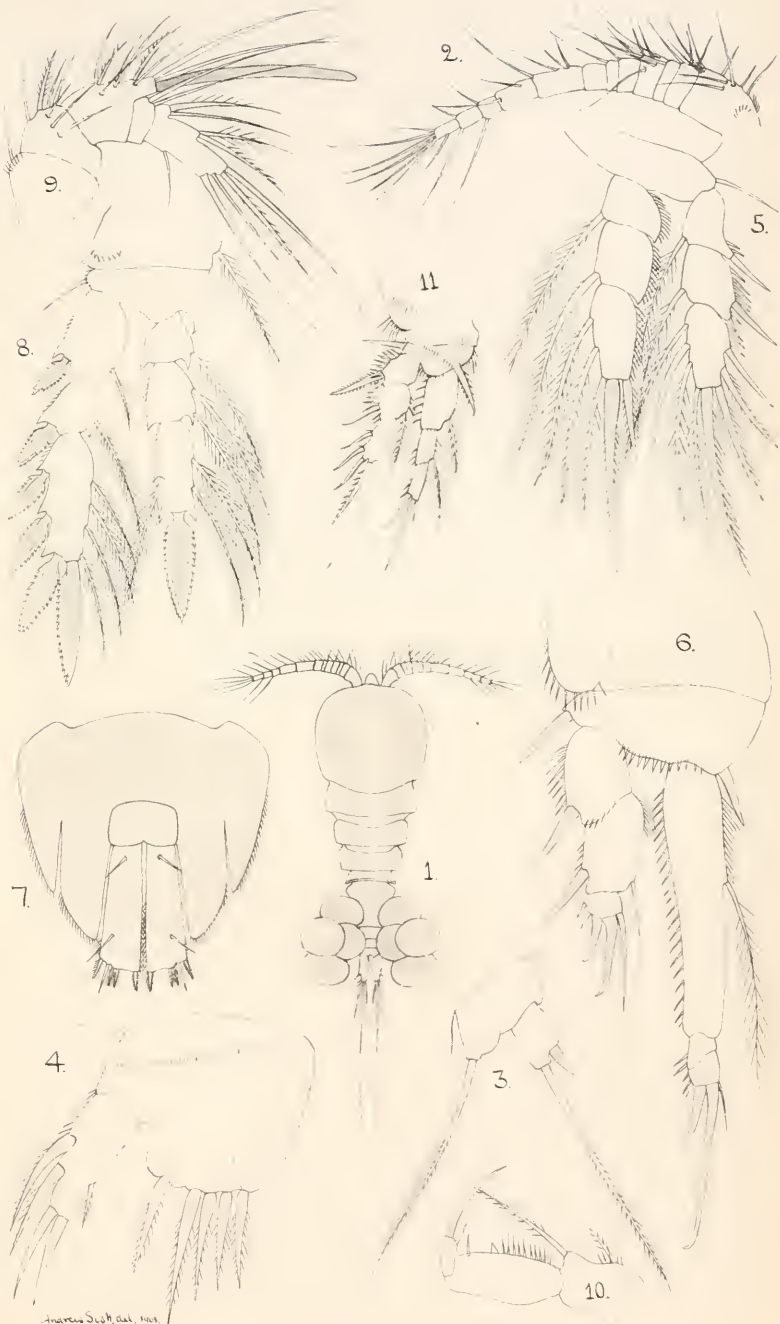


2.

Andrew Scott, del. 1905

PLATE XX.

- Fig. 1. *Cyclops venustus* (p. 189), female, dorsal view.
2. ,, ,, female, antennule.
3. ,, ,, foot of fifth pair (female).
4. *Megarthrurum purpurocinctum*, foot of fifth pair (female).
5. ,, ,, foot of fourth pair.
6. *Dactylopusia valida*, foot of first pair.
7. *Porcellidium lecanoides*, abdomen and furcal joints.
8. *Mesocheres anglicus*, foot of fourth pair.
9. *Robertsonia tenuis*, antennule (female).
10. ,, ,, second maxilliped.
11. ,, ,, foot of first pair.



Andrews Sci. pub. Nov.

PLATE XXI.

- Fig. 1. *Stenhelix simulans*, antennule (female).
2. *Parastenhelix anglica*, antennule (female).
3. *Laophonte inornata*, antennule (male).
4. *Vullentinia ornata*, antennule (female).
5. „ „ antennule (male).
6. *Robertsonia tenuis*, foot of fifth pair (female).
7. *Ameira simplex*, furcal joints.
8. *Stenhelix neglecta*, furcal joints.
9. *Cyclops prasinus*, antennule (female).
10. „ „ foot of fifth pair.
11. „ „ abdomen and furcal joints.

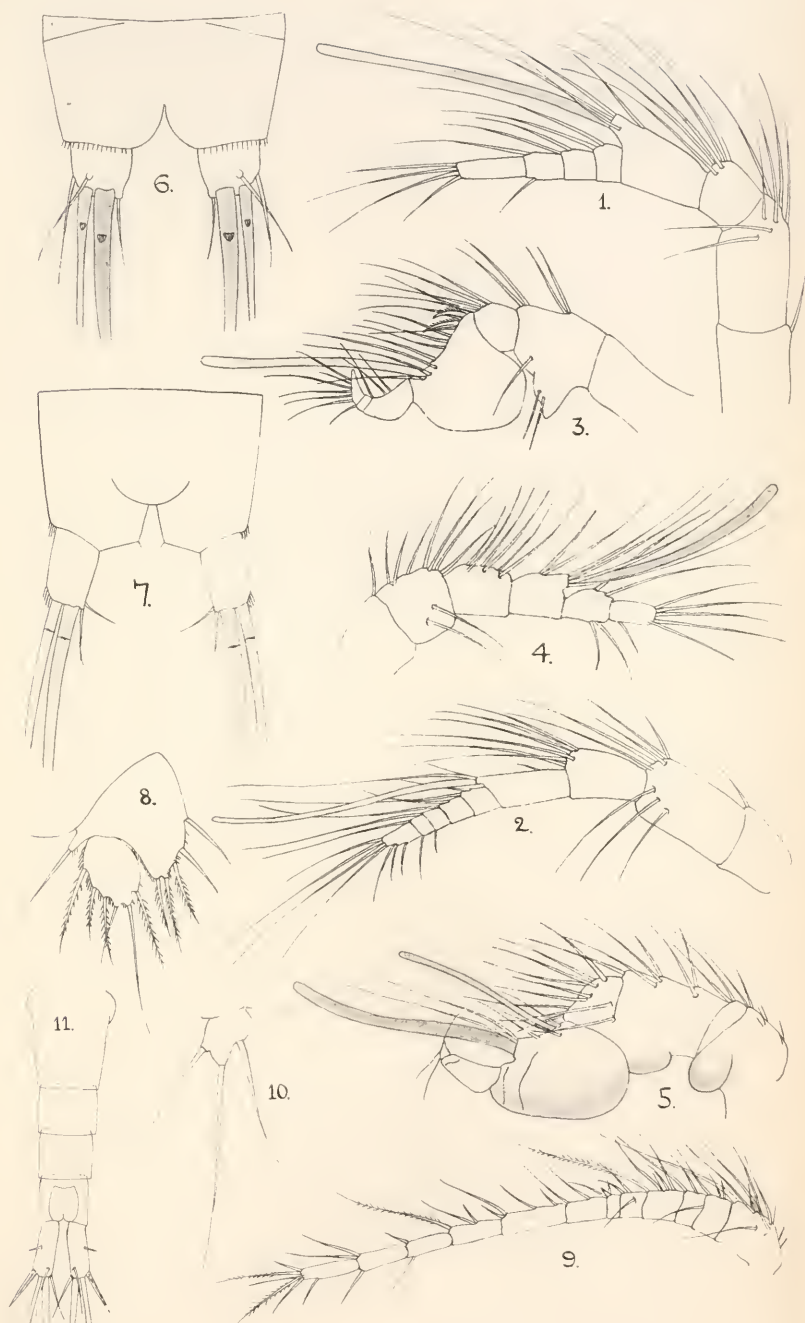


PLATE XXII.

Fig. 1. *Echthrogaleus Lütkeni* (Norman), p. 213, ♂.

2.	„	„	antennule.
3.	„	„	antenna.
4.	„	„	first maxilliped.
5.	„	„	second maxilliped.
6.	„	„	first foot.
7.	„	„	second foot.
8.	„	„	third foot.
9.	„	„	fourth foot.

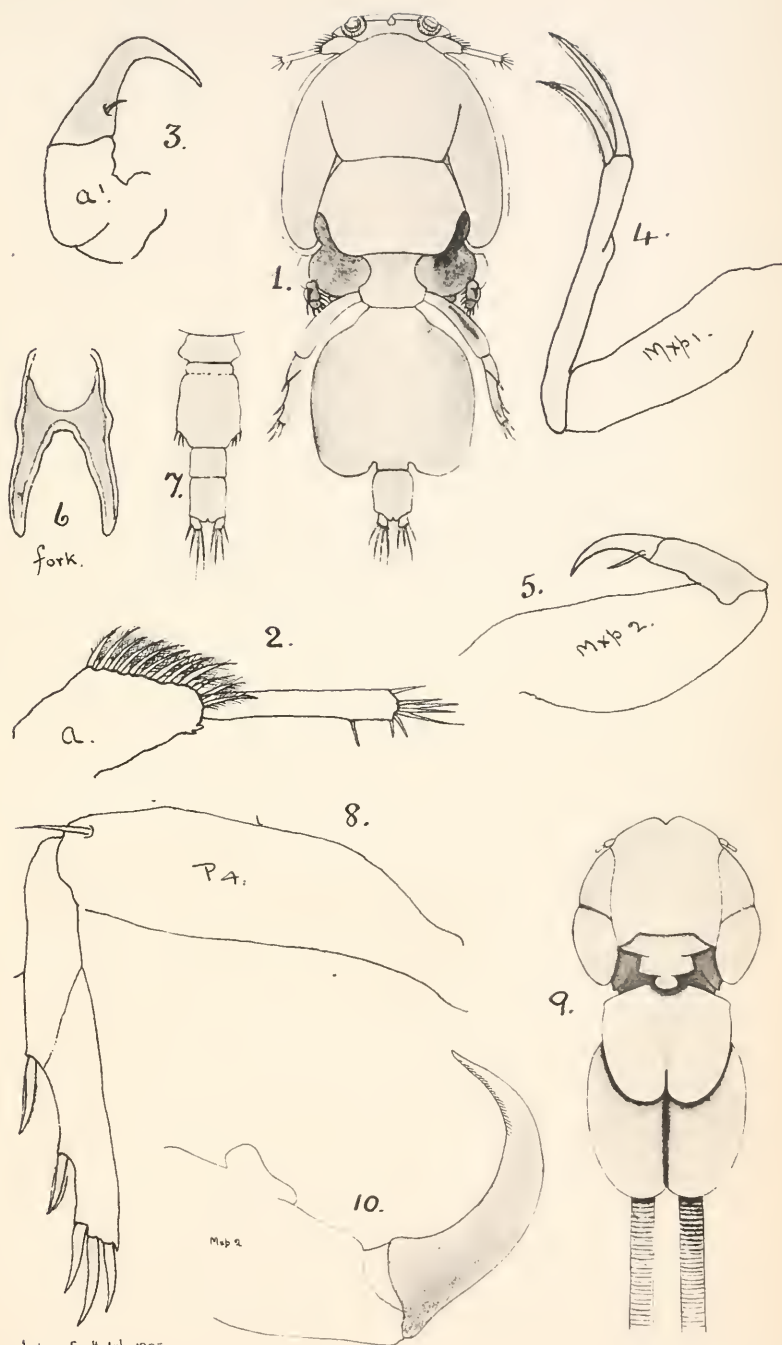


PLATE XXIII.

Fig. 1. *Caligus zeii*, n. sp., p. 206, ♀.

2. „ antennule.
3. „ antenna.
4. „ first maxilliped.
5. „ second maxilliped.
6. „ furea.
7. „ urosome ♂.
8. „ fourth foot.

9. *Lütkenia asterodermi*, Claus, p. 210, ♀.

10. „ „ second maxilliped.

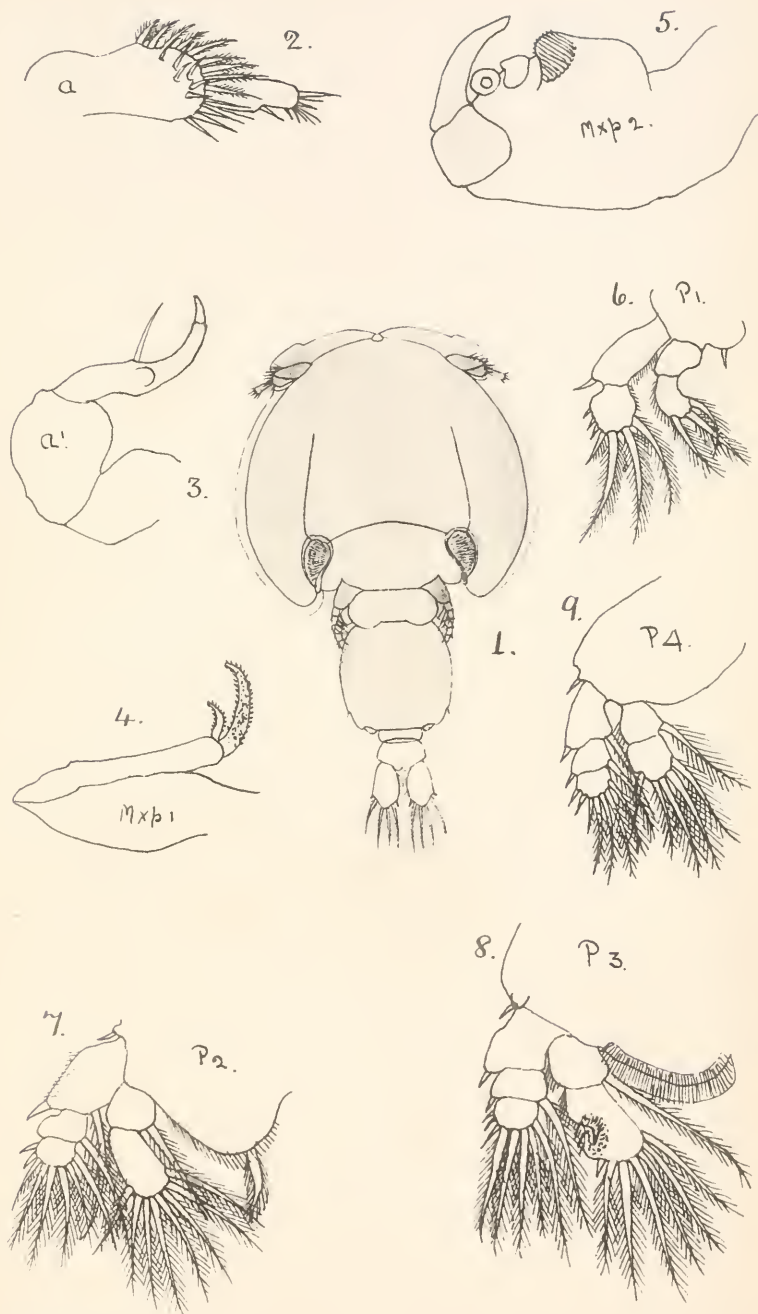


PLATE XXIV.

Fig. 1. *Lütkenia asterodermi*, Claus, p. 210, ♀, antennule.

2. ,, ,, antenna.
3. ,, ,, first maxilliped.
4. ,, ,, first foot.
5. ,, ,, second foot.
6. ,, ,, third foot.
7. ,, ,, fourth foot.
8. ,, ,, uropod.

9. *Phyllothyreus cornutus* (H. Milne-Edwards), p. 212, ♀.

10. ,, ,, antennule.
11. ,, ,, antenna.
12. ,, ,, first maxilliped.
13. ,, ,, second maxilliped.
14. ,, ,, first foot.
15. ,, ,, second foot.
16. ,, ,, third foot.
17. ,, ,, fourth foot.



Andrew Scott del., 1905.

London Stereoscopic Co imp.

